

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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CONTENTS.

| Editorial Comment : | PAGE |
|--|------|
| The R.F.C. in the War ... | 951 |
| The Menace of the Zeppelin ... | 952 |
| "The New Rake's Progress" ... | 953 |
| The "Round Britain" Machines ... | 954 |
| Royal Aero Club. Official Notices ... | 956 |
| Aircraft "Made in Germany" ... | 957 |
| From the British Flying Grounds ... | 960 |
| Eddies. By "Æolus" ... | 961 |
| The Work of the Royal Flying Corps. Sir J. French's Report ... | 963 |
| Death of Mr. Richard T. Gates ... | 964 |
| Aircraft and the War ... | 965 |
| "The Aeroplane of To-morrow." By L. De Bazillac ... | 968 |
| Models. Edited by V. E. Johnson, M.A. ... | 969 |

EDITORIAL COMMENT.

The R.F.C. in the War.

Since we quoted from the first despatch of Sir John French the epic terms in which he spoke of the work of the British aviators during the retreat from Mons, the summary of another despatch from the Field-Marshal Commanding-in-Chief has been published. This speaks in greater detail of the work of the R.F.C. in the field, and the record is truly one of which the nation may justly feel proud, even though it is only in general terms that Sir John French refers to its doings. He tells us in due course certain examples of what has been effected may be specified and the "far-reaching nature of the results" fully explained, but, as he says, the time is not yet arrived. These are pregnant words which make us long to hear the brilliant story of how the officers and men of the junior arm, the R.F.C., have called forth so deep an appreciation from a commander so little prone to award indiscriminate praise as we know Sir John French to be.

The full text of the summary as it refers to the R.F.C. we print separately, so that we need not further refer to it here—it speaks more for itself than would be possible for us to do. It is a plain, soldierly tribute from a great commander to men who have done their duty nobly and in the finest spirit of self-sacrifice. As such it needs no embroidery.

And now the time is ripe to ask the question, what are we going to do for these officers and men who have manifestly by the excellence of their work—work calling for courage and nerve of the highest quality—in all human probability made possible the successful issue which has emerged from the operations of the past two weeks? We know that they are simple soldiers, who are content with the knowledge that they have done what was expected of them unflinchingly and without hesitation. They do not think of reward. Duty is their sole watchword. But surely for such special duty as that which the R.F.C. is expected to do, duty which is hazardous far beyond the ordinary hazards of war, there should be some special recognition. We like the suggestion of Mr. H. G. Wells, when he puts forward the idea that there should be an order of knighthood—real knighthood—sacred to the air service. Let us give it in his own words:—

"The task that we are asking from our aviators is one of the most dazzling and terrible that men have ever faced. The single combats that distinguished the age of chivalry, when champion rode against champion in front of the closing hosts, were but tame exhibitions before the starry deeds these men will have to do. Up they will go, to dash themselves into Zeppelins, to slash the Zeppelin envelope with trailing knives, to outfly the hostile aeroplanes and pick off the pilots—duels in the giddy void in the sight of armies. So at least it seems to me such fighting must be done.

"And there is something more. We owe these men honour. Our common men are brave, but these men who will fight in the air will be something more than common men. They will be the aristocracy of the army. No man fights the worse for the knowledge that the world regards him. Whatever else is kept from us, one thing we must have from the front, and that is the story of every such encounter as I have foreshadowed, and the names of the men who did the thing. Nothing can be too good for such men.

"I want to make a proposal for these men who, more than any others, are destined to save Europe from Germany. It is to make for them an order of knighthood. Nelson could be stirred by the thought of a peerage or Westminster Abbey. Every aviator who goes up to fight—I do not mean to reconnoitre, but to fight—will fight all the more gladly with two kindred alternatives in his mind—a knighthood or the prompt payment of a generous life insurance policy to his people. Every man

who goes up and destroys either an aeroplane or a Zeppelin in the air should, I hold, have a knighthood if he gets down alive. And I venture to say that we shall create thereby the most honourable and enviable Order that this world has ever seen."

Perhaps in its detail Mr. Wells' idea may be open to misconstruction, but the principle is altogether admirable, and it must be seen to that those with whom these things rest do not lose sight of it.

The Menace of the Zeppelin.

Rumours persist that Germany intends to carry out an aircraft raid on England, either independently or in conjunction with the Fleet which has up to now not dared to show itself in the waters of the North Sea. Even though it would undoubtedly be in the nature of a desperate enterprise, it is as well that we should not neglect the possibility of such an attempt being made. As a matter of fact, the possibility is not by any means being neglected by those in charge of our defences. On the contrary, every preparation has been made, and is being made, to give any such aerial visitors the warmest of welcomes to our shores. More than that it would obviously be unwise to say at the moment.

When the war broke out Germany possessed, so far as was known, seventeen dirigibles capable of making the voyage to England and back to the western German frontier. Allowing for known casualties, and assuming that no more airships have been put into commission since the war began, Germany should still possess at least twelve first-class airships. But we cannot assume that no new craft have been commissioned. Indeed, there is good reason for the belief that prior to the war Germany had been secretly building airships, large and small, so that it would be quite unsafe to build on the idea that she possesses no more than a round dozen of craft suitable for such a raid as that which is said to be in contemplation. It might be said that such vessels as those of the Zeppelin type cannot be kept hidden. In this connection an interesting suggestion is made by a well-known writer, to the effect that these craft have been duplicated. Obviously, if one such craft is observed on a particular day bearing a certain number, and on another day a similar craft is seen bearing the same number, the assumption will be that they are one and the same craft. This very obvious means of concealing real strength may be effective, but



The Lights of London.

THE following notice has been issued by the Commissioner of Police of the Metropolis, and the assistance of the public generally is invited to give loyal effect to it:—

"In order to render more difficult the identification of particular parts of London, it is requested that arc lights, sky signs, illuminated facias, and powerful lights of all descriptions used outside for advertising or brilliantly illuminating shop fronts be dispensed with. Where the shop front consists of a considerable area of glass brilliantly lit from inside, a reduction of lighting intensity should be effected.

"This request is made in connection with the observation of London lighting from above that will be made by a naval airship to-day, and during the course of the next three or four days."

This notice was supplemented by the following, issued on Wednesday last:—

"In view of the known power and range of the modern

only to a limited extent and up to the number of sheds available for housing these craft. That is an aspect of the question which does not appear to have entered the mind of the writer in question when he assumes that Germany started the war with a 50 per cent. excess over the strength in Zeppelins she was known, or assumed, to possess. Craft like Zeppelins require enormous sheds, and these cannot be concealed by any such elementary device as the duplication of numbers.

Now, as to the possibility of a successful raid on this country. We know that the Zeppelins have a range of 1,000 miles at least—quite enough to make it possible for them to undertake the return voyage from the western frontier of Germany to London, given moderate weather conditions, supposing the capital to be made an objective, which would be quite likely. But in order to succeed, the airships would have to cross the North Sea with the strong probability that they would come under the fire of the guns of a part of the British Fleet. Assuming that they *did* cross the North Sea without interference from the Fleet, by the time they reached these shores their troubles would only be commencing. We have a large number of high-angle guns which have been specially mounted in anticipation of such an attempt as we are discussing. Besides these, it must be remembered that we have a considerable number of sea-planes, whose mission it would be to attack the airships in their own element, and it is thus scarcely probable that any of them would get far enough to do any real damage. An airship fleet is very closely related in its organisation to a sea fleet. The latter cannot carry out its duties either of attack or defence unless it is complete with its proper complement of small craft to deal with the small craft of the enemy and to ward off their attacks on its capital ships. So with an air fleet. No raid or aerial invasion, such as is said to be a part of the German plan, can hope to succeed unless the airships are accompanied by a swarm of aeroplanes, superior in number and in efficiency to our own, and able to carry out the functions which fall to the small, fast craft in naval war, viz., to ward off the attacks of our aeroplanes on the Zeppelins and destroy them. There is not the slightest ground for thinking that Germany possesses the necessary number of such small aircraft, or that she is able to build faster than ourselves. On this presumption, we may dismiss a successful German raid by air as not falling inside the probabilities.



Zeppelins, the Commissioner of Police is advised by the Air Department of the Admiralty that it is desirable to continue for the present the diminution of lighting in streets and shops.

"An airship will be sent on several nights to examine London from above, but some time may be required for this to be carried out satisfactorily, as nights vary in intensity of darkness.

"As a result of this examination it is hoped to be able to modify certain existing restrictions. In the meantime it is necessary in the public interest that the reduction in the illumination of streets and shops be maintained."

Airship Patrol Suspended.

IN connection with the arrangements made for work of the aircraft patrols above the Metropolis, the following notice was issued on Tuesday:—"The Secretary of the Admiralty announces that the gales have been so strong that it has become necessary to deflate the airship 'Eta.'"

"THE NEW RAKE'S PROGRESS."—The Kaiser is warned by the Great Chancellor.—Punch, October 6th, 1888.



A Wise Warning.

DÆDALUS BISMARCK (*Political Parent* of WILHELM ICARUS).

"My son, observe the middle path to fly,
And fear to sink too low or rise too high.
Here the sun melts, there vapours damp your force,
Between the two extremes direct your course.

"Nor on the Bear, nor on Boötes gaze,
Nor on sword-arm'd Orion's dangerous rays:
But follow me, thy guide, with watchful sight.
And, as I steer, direct thy cautious Flight."

OVID, "*Metamorphoses*," Book VIII, Fable III.

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THE "ROUND BRITAIN" MACHINES.

THE machine which was numbered 7 in the Circuit of Britain, and for which Mr. F. P. Raynham had been nominated pilot, was

The Avro Seaplane.

No great departures from standard Avro practice are to be found in this machine except, of course, such alterations as have been necessitated by the substitution of a Sunbeam engine for the Gnome with which Avro biplanes have been usually equipped hitherto.

The *fuselage* is of the standard type, of rectangular section, and is built up of four *longerons* of ash connected by struts and cross members of ash and spruce. Three-ply wood stiffening pieces are screwed to the *longerons*, which by this means can be kept comparatively thin without sacrificing the necessary strength. The deck of the *fuselage* is in the form of a turtle back, whilst the bottom is flat. In front the *fuselage* is sufficiently deep to totally enclose the 150 h.p. Sunbeam engine, which is mounted on strong bearers suitably connected up to the lower *longerons*. The exhaust pipes are taken to a funnel projecting up above the upper main planes so that there is no danger of the exhaust gases causing pilot and passenger any discomfort, by being blown back in their faces.

The two seats, which are of the bucket type, are arranged in tandem, the pilot occupying the rear seat. Dual controls are fitted, so that either of the occupants may pilot the machine in turn. *Ailerons* and elevator are operated by means of rotatable hand wheels mounted on

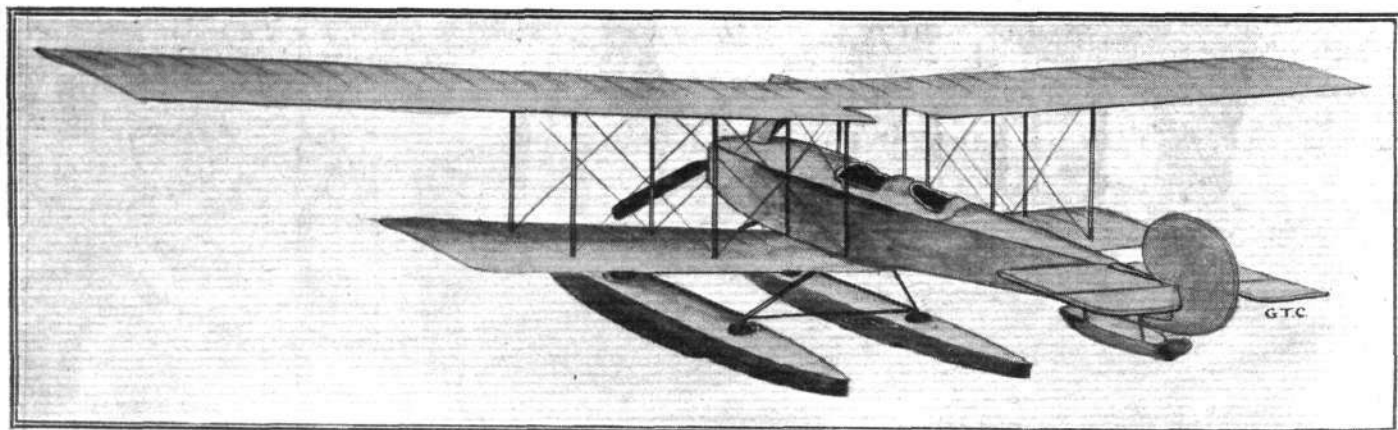
are characterised by a very pronounced overhang of the top plane. Lift cables run to various points on these extensions from the lower ends of the outer inter-plane struts, whilst the top bracing wires are taken to king posts above the plane. Both upper and lower main planes are set at a very pronounced dihedral angle, thus helping to provide the necessary fin area to balance the side area of the floats. *Ailerons* are fitted to the top plane only, but as they are of large area, and the machine is, moreover, to a great extent inherently stable laterally, there is probably an ample amount of lateral control. Four pairs of spruce struts separate the main planes in addition to the two pairs of *fuselage* struts, and cable bracing provides the necessary rigidity.

Tail planes of the usual Avro type are fitted at the rear end of the *fuselage*. A flat, non-lifting stabilizing plane is bolted to the sides of the *fuselage*, to which it is further stayed by means of two struts running to the lower *longerons*. A divided elevator is hinged to the trailing edge of the stabilizing plane, and a balanced rudder pivots round the tubular extension of the stern post of the *fuselage*. The lower end of this tubular rudder post carries a small rudder used for steering when the machine

is taxiing on the surface of the sea. A flat-bottomed rectangular section float, supported on four steel tubes coming down from the lower *longerons* of the *fuselage*, takes the weight of the tail planes when at rest.



Mr. F. P. Raynham, the nominated pilot for the Avro biplane in the Circuit of Britain Race.

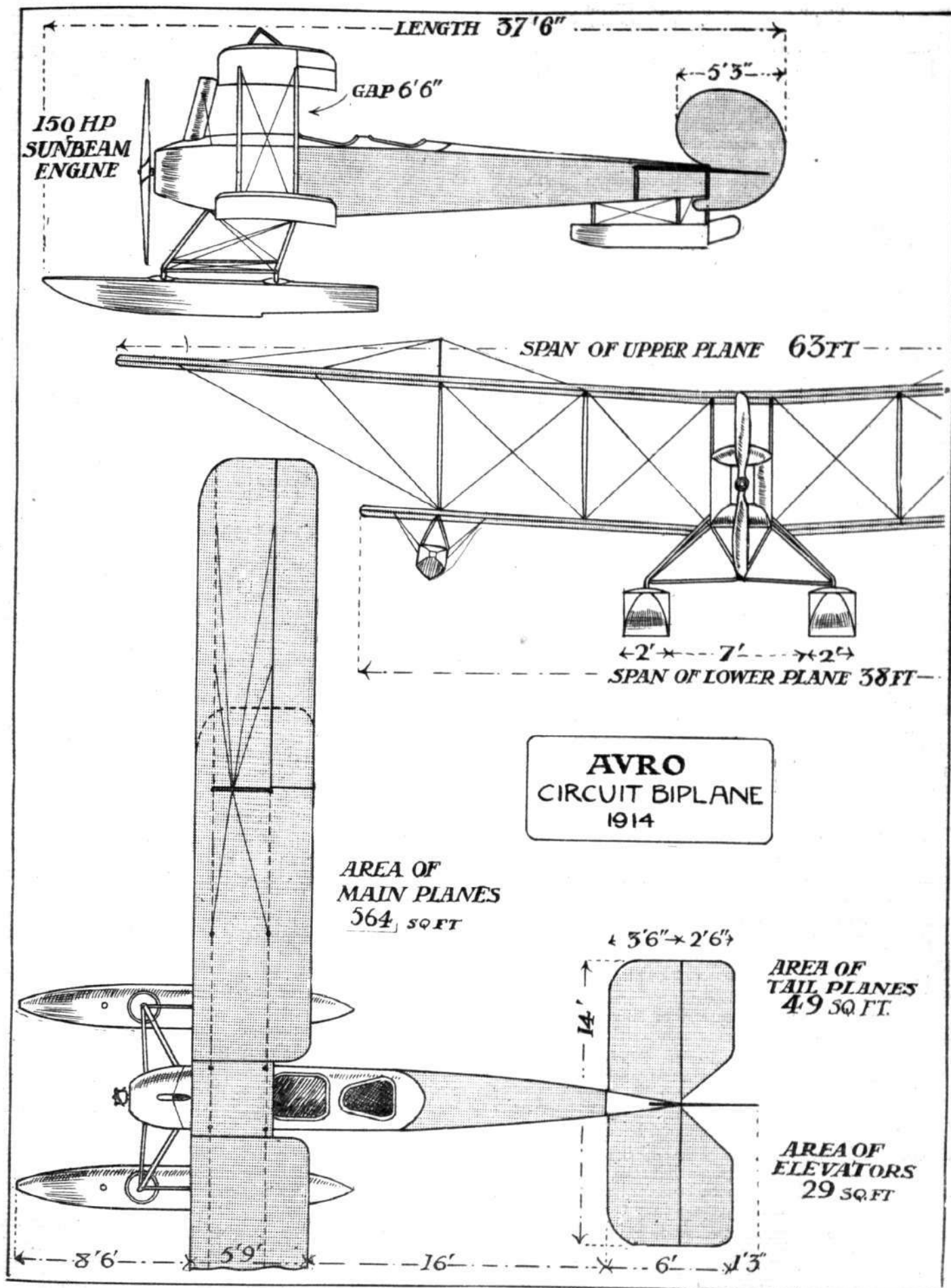


ROUND BRITAIN MACHINES, No. 7.—The Avro biplane.

vertical columns, to which are connected the elevator control cables. Steering is effected by pivoted foot bars. Between the passenger's seat and the engine are arranged the petrol and oil tanks, which have a capacity of 52 galls., or sufficient for a flight of $4\frac{1}{2}$ hours' duration.

The main planes are of the usual Avro section, and

The main chassis is similar in type to that of previous Avro seaplanes, and is chiefly characteristic on account of the method of springing the floats. From the accompanying illustrations, it will be seen that the floats are supported on an "M" form structure of steel tubes, as seen from in front. Transverse steel tubes connect the



ROUND BRITAIN MACHINES, No. 7.—The Avro biplane. Plan, side and front elevations to scale.

lower points of the M to provide lateral stiffness. Immediately above the floats the tubular chassis struts are bent downwards, and carry at their lower ends, which project down inside the floats, cross-pieces to which the shock-absorbers are attached.

The two main floats, which are pitched 9 ft. apart, are of rectangular section, and are provided with a single step, occurring approximately under the centre of pressure of the wings. They are very strongly built, and as they have not been unduly lightened (each of them weighs 200 lbs.),

they may be relied upon to stand up to even a comparatively rough sea. The openings through which pass the chassis struts are covered with canvas flaps, forming a waterproof, and at the same time flexible, cover over the openings. Small wing tip floats are fitted to the lower plane under the outer pair of inter-plane struts.

The weight of the machine fully loaded, including pilot, passenger and fuel for $4\frac{1}{2}$ hours, is 2,800 lbs., and the loading works out at about 5 lbs. per sq. ft. A speed of 70 m.p.h. is anticipated.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

- 897 Capt. Arthur Douglas Gaye (Avro Biplane, Central Flying School, Upavon). Sept. 8th, 1914.
- 898 Cyril Marconi Crowe (Grahame-White Biplane, Grahame-White School, Hendon). Sept. 8th, 1914.
- 899 Flight Sub-Lieut. Ralph Whitehead, R.N.A.S. (Grahame-White, Biplane, Grahame-White School, Hendon). Sept. 8th, 1914.

- 900 Flight Sub-Lieut. Ralph James Hope-Vere, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Sept. 9th, 1914.
 - 901 William Roche Kelly (Wright Biplane, Beatty School, Hendon). Sept. 9th, 1914.
 - 902 Charles Henry Butler (Henry Farman type Biplane, Pashley School, Shoreham). Sept. 6th, 1914.
 - 903 Corporal Frederick Adams, R.F.C. (Maurice Farman Biplane, Central Flying School, Upavon). Aug. 20th, 1914.
- 166, Piccadilly, W. HAROLD E. PERRIN, Secretary.

THE ROYAL FLYING CORPS.

THE following appointments were announced by the Admiralty on the 10th inst.:—

Royal Naval Air Service.—Reginald E. Nicoll has been appointed Probationary Flight Sub-Lieutenant, and appointed to the "Pembroke," additional, for Central Flying School, September 7th.

The following appointment was announced by the Admiralty on the 11th inst.:—

Royal Naval Air Service.—J. H. B. Hartford has been appointed Probationary Flight Sub-Lieutenant, and appointed to the "Pembroke," additional, for Farnborough Naval Air Station, to date September 7th.

The following appointments were announced in the *London Gazette* of the 11th inst.:—

R.F.C.—Military Wing.—The following to be Second Lieutenants (on probation):—G. H. Eastwood (September 10th); R. Chambers (September 12th).

The following appointment was announced by the Admiralty on the 13th inst.:—

Royal Naval Air Service.—Archibald Cornelius has been appointed Probationary Flight Sub-Lieutenant, and appointed to the "Pembroke," additional, for Central Flying School, September 10th.

The following appointments were announced by the Admiralty on the 14th inst.:—

Royal Naval Air Service.—P. Murray, entered as Flight Sub-Lieutenant for temporary service, and appointed to "Pembroke," additional, for Central Flying School, to date September 12th. E. R. Moon, entered as Probationary Flight Sub-Lieutenant, for temporary service, and appointed to the "Pembroke," additional, for Hendon Air Station, to date September 11th. G. Colmore and C. Verner, both entered as Probationary Flight Sub-Lieutenants for temporary service, and appointed to the "Pembroke," additional, for course of instruction at Farnborough Naval Airship Station, to date September 11th. K. Savory, A. Griffin, M. Marsden and H. Hall, all entered as Probationary Flight Sub-Lieutenants, and appointed to the "Pembroke," additional, for Central Flying School, to date September 11th.

C. Butler, entered as Flight Lieutenant, for temporary service, and appointed to the "Pembroke," additional, for Central Flying School, to date September 11th. D. Johnston, entered as Probationary Flight Sub-Lieutenant, for continuous service, and appointed to the "Pembroke," additional, for Central Flying School, to date September 11th. N. Tomlinson, entered as Flight Sub-Lieutenant, temporary, and appointed to the "Pembroke," for service with the Naval Airship Section, September 8th. G. M. Dyott, entered as Probationary Flight Sub-Lieutenant, temporarily, and appointed to the "Pembroke," additional, for the Calshot Naval Air Station, to date September 12th.

The following appointments were announced in the supplement to the *London Gazette*, issued on the 14th inst.:—

Central Flying School.—Temporary appointment made: Capt. Tom I. Webb-Bowen, Bedfordshire Regt., as Instructor, to be Assistant Commandant, and to be granted the temporary rank of Major whilst so employed. August 7th, 1914.

R.F.C.—Military Wing.—*Supplementary to Regular Corps.*—Second Lieut. Ronald L. Charteris to be Lieut. August 30th, 1914.

The following appointments were announced in the *London Gazette* of the 15th inst.:—

Royal Naval Air Service.—Acting Commander Charles Rumney Samson has this day been promoted to the rank of Commander in His Majesty's Fleet. September 11th.

The undermentioned gentleman has been appointed a Flight Sub-Lieutenant for temporary service in His Majesty's Navy: Noel Bannister Tomlinson. Dated September 8th, 1914.

R.F.C.—Military Wing.—The undermentioned Flying Officers are advanced to Flight Commanders, and are granted the temporary rank of Captain whilst so employed. Dated September 4th, 1914: Lieut. Augustus C. E. Marsh, Royal Artillery, and Lieut. Esmé F. Chinnery, Coldstream Guards.

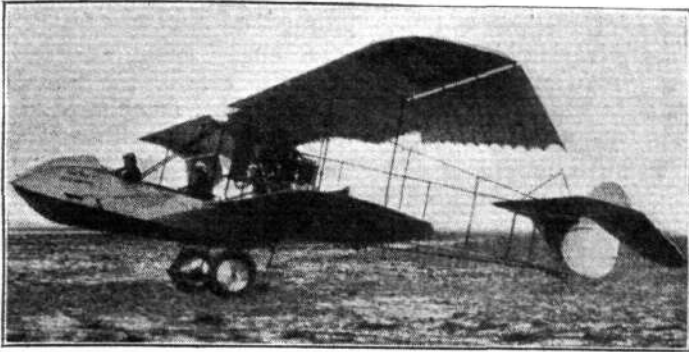
AIRCRAFT "MADE IN GERMANY"

WHICH MAY BE EMPLOYED AGAINST THE ALLIES.

(Continued from page 941.)

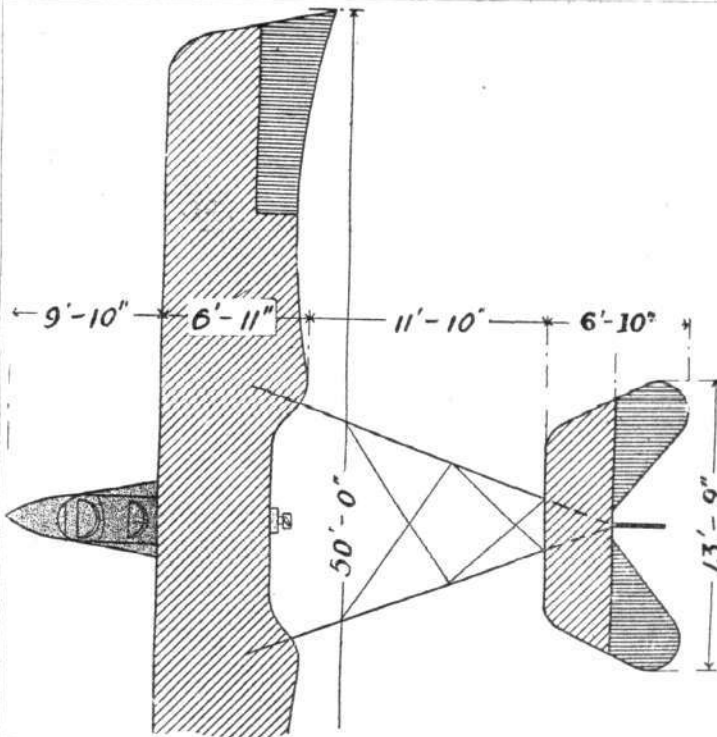
27. The Otto Biplane

is one of the comparatively few propeller biplanes in use in Germany. It is somewhat reminiscent of the Henry



27. The Otto biplane.

Farman biplane, the upper main plane being of considerably greater span than the lower one. The nacelle,

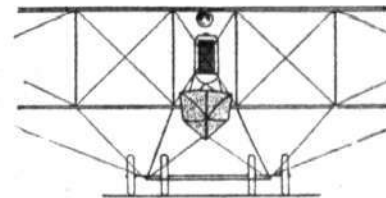
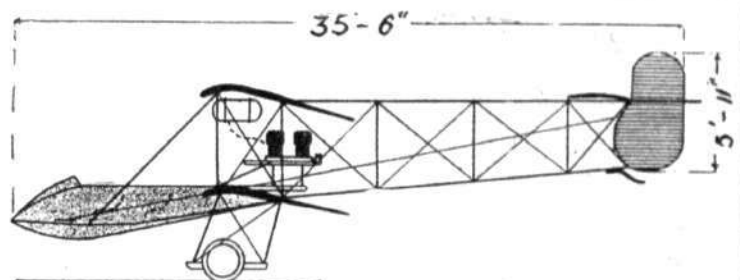


28. The Roland (L.F.G.) Arrow Biplane

shown in the accompanying photograph is the actual machine on which the German pilot, Bruno Langer, made some time ago a non-stop flight of sixteen hours' duration, a performance which clearly demonstrates the excellent qualities of both the machine and the 100 h.p. Mercedes engine with which it was fitted.

As a type the Roland biplane is in every way similar to other arrow biplanes, being characterised by the back-swept wings, of which the lower one only is set at a dihedral angle, whilst the upper one is straight, as seen from in front. The fuselage is of the usual streamline form, and is rectangular in section. It is covered in front with aluminium sheeting, which has inspection doors cut in it to allow of easy access to the interior.

When used as a two-seater the passenger sits immediately behind the engine, and between him and the pilot's seat is mounted the petrol tank. In front of both occupants are celluloid windscreens mounted on an aluminium framework. For the 16 hours' flight a larger



27. The Otto biplane.

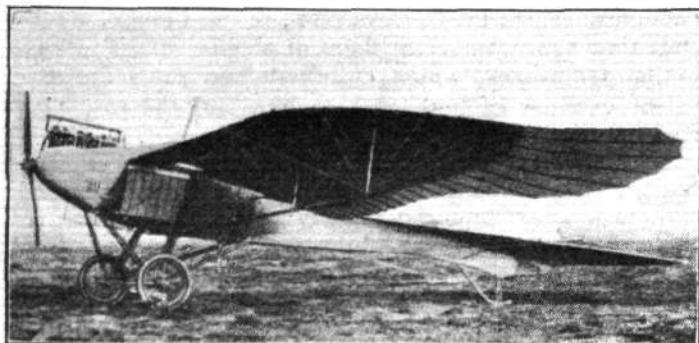
however, is of quite a different type from that of the Henry Farman, both as regards its shape and position. The upper *longerons* of the nacelle are attached to the spars of the lower main plane, and both upper and lower *longerons* taper to a point in the nose, whilst gradually flattening out towards the rear. To the tips of the upper main planes are hinged *aileron*s which are of greater chord at their tip than at the root, in order, no doubt, to render them more effective. The engine—a 100 h.p. Mercedes—is mounted a considerable distance above the lower plane, and drives a propeller situated behind the main planes, the trailing edges of which have been cut away in the centre to provide the necessary clearing. The tail planes are carried on an outrigger of steel tubes, and consist of a fixed stabilising plane, hinged to the trailing edge of which is the divided elevator, and of a partly balanced rudder. It will be noticed that, as in the Henry Farman, no vertical tail fin is fitted.

tank was fitted, whilst an additional supply of petrol was carried in the extra tank which may be seen in the photograph mounted just above the fuselage between the *cabane* struts.



28. The Roland Arrow biplane.

The tail plane of the Taube type is mounted on top of the *fuselage*, and the rudder is hinged to the rear edge of a small triangular vertical tail fin. A skid formed by three steel tubes takes the weight of the tail planes when the machine is on the ground. The chassis is of the simplest type, consisting of only two pairs of streamline steel tube



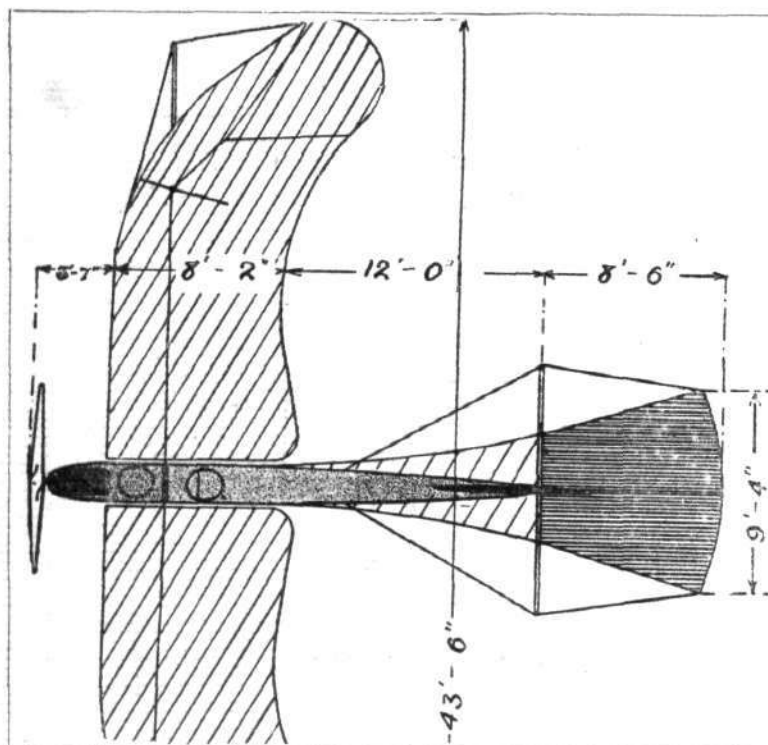
29. The Rumpler Taube.

struts, each pair of which forms a V as seen from the side. The apices of the Vs are connected by a transverse horizontal tube on which rests the tubular axle slung from the angle between the chassis struts by means of rubber shock-absorbers.

of the usual Taube type. With a 100 h.p. Mercedes engine the speed of this machine is 62 miles per hour.

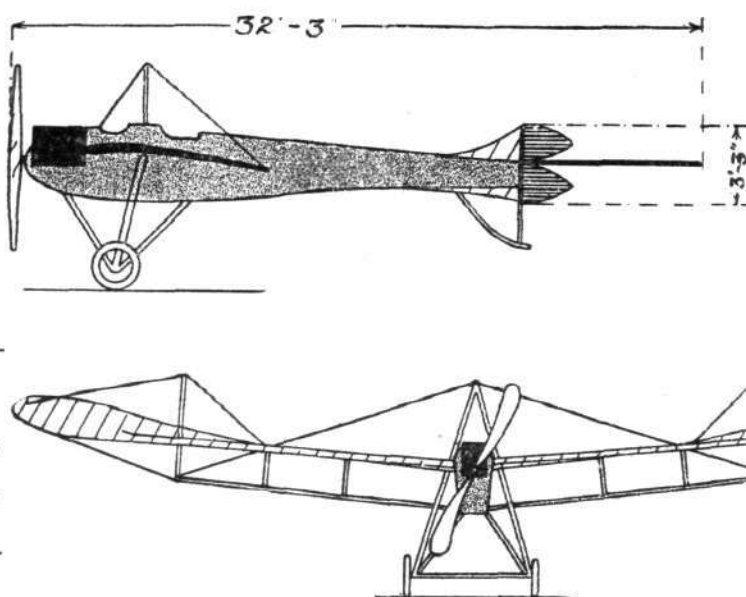
30. The New Rumpler Taube

is of an improved type, chiefly as regards the wing bracing, which in this machine is effected by means of stranded cables instead of the girder structure under the wings. The bracing cables are taken to pyramidal *cabanes* or *pylons* above and below the *fuselage*, and instead of the flexing wing tips usually found on monoplanes of the Taube type, upturned *aileron*s are fitted. These, it should be noted, are hinged along an axis forming an angle with the transverse axis of the main planes. The only feature constituting this machine one of the Taube class is its Zanolia-form wings, it otherwise following standard practice as regards its *fuselage*, tail planes and chassis. The flexing elevator has been replaced by one of the hinged, divided type, whilst the rudder is hinged to the stern post, and not half above and half below the *fuselage*. The chassis is built up of four steel tubes forming two pairs of Vs, in the angle of which rests the axle, which is sprung by rubber shock-absorbers. Evidently the reduction of head resistance effected by substituting cable bracing for the girder structure under the wings has considerably increased the speed, for with a 100 h.p. Mercedes engine this machine is capable of doing about 74 m.p.h.



29. The Rumpler Taube

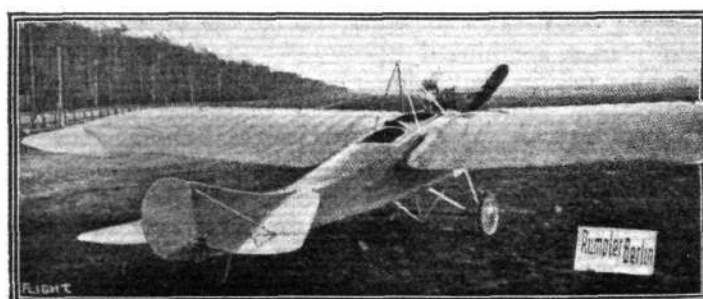
differs from other monoplanes of the Taube type only in the shape of its *fuselage* and in the type of chassis fitted. The *fuselage* is very deep and narrow, and is fitted with the usual turtle-back, which is, however, considerably higher than is usually found. The chassis consists of two telescopic tubes fitted with coil springs and anchored to the upper *longerons* of the *fuselage*. At their lower extremities these telescopic tubes carry the wheel axle, and each of them is kept in place by two steel tubes running forward and backward to the lower *longerons* of the *fuselage*. The radiators are mounted on each side of the *fuselage* below the leading edge of the wings. Openings have been cut out in the inner front portion of the main planes, and through these the passenger obtains a view of the ground below. Wings as well as tail planes are



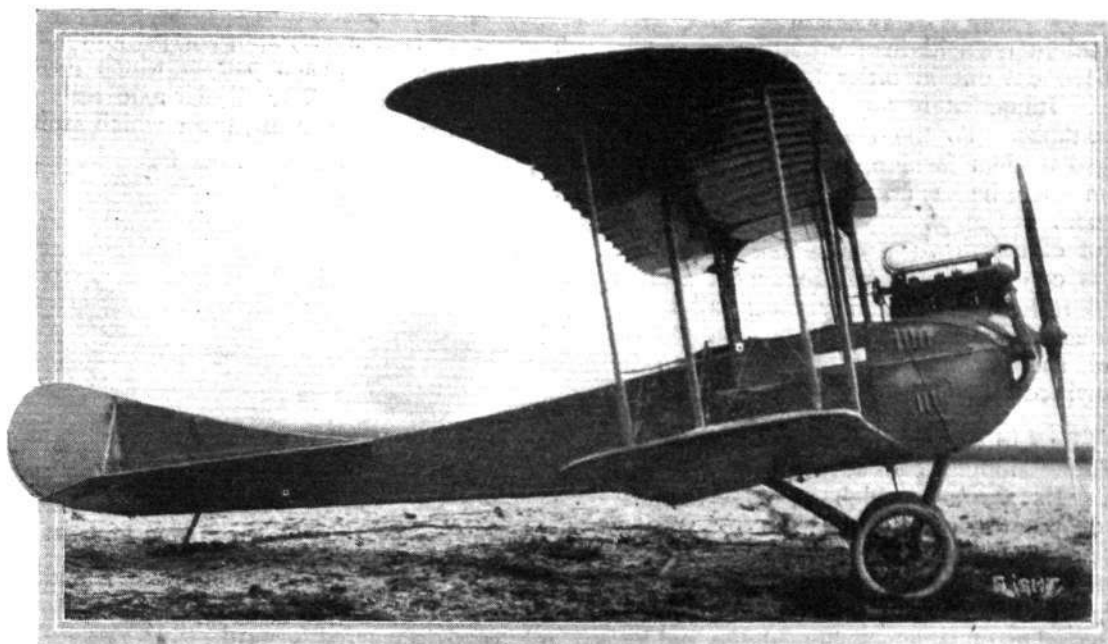
29. The Rumpler Taube.

31. The Rumpler Biplane

is one of the newest types of German biplanes, as it made its first appearance on the last day of the "Tri-



30. The new Rumpler Taube.



31. The Rumpler biplane.

angle" race. The rectangular section *fuselage* is of very roomy proportions as in all Rumpler machines. It is covered in front with aluminium, and a slight turtle-back is formed by three-ply wood; the rest of the *fuselage* is covered with fabric. The chassis is similar to that of the new monoplane, so that spare parts may be employed to replace any broken parts of either monoplane or biplane.

The wings have been designed with a view to facilitate erecting and dismantling, and differ from usual practice in that the upper plane does not join in the centre as in nearly all other German biplanes, but follows more the English practice of having a short centre section attached to the *fuselage* by four tubes, which remains in place when the wings are dismantled. *Ailerons* are fitted to the upper plane only, and the control cables do not, as in previous Rumpler machines, pass through the interior of the plane, but under the lower plane and up through openings to the top plane. The interplane struts are streamline steel tubes, which are quickly detachable, and the cross-bracing is by means of stranded steel cables. Pilot and passenger are installed tandem-fashion in separate cockpits, the passenger sitting in front. The engine fitted as standard is a 100 h.p. Mercedes.

32. The Schwade Biplane

is of the "pusher" type, and is to all intents and purposes



32. The Schwade biplane.

a copy of the Henry Farman biplane. It differs from that well-known machine in minor details only, and does not, therefore, need a lengthy description here. The engine fitted is an 80 h.p. Stahlhertz rotary motor, mounted in the rear of the *nacelle*. The chassis is similar to that of the large span H. Farman biplane flown by Carr in the Aerial Derby this year, and

consists of four Us of steel tubes, the lower portion of which is joined in pairs to form short skids.

The main planes are, like those of the H. Farman, characterised by a very pronounced overhang to the top plane, the weight of which, when the machine is on the ground, is taken by wires passing over king-posts on top of the upper plane. The weight fully loaded is 1,532 lbs., and the loading a little over 3 lbs. per sq. ft. The speed is 60 m.p.h. with an 80 h.p. Stahlhertz engine.

33. The Sommer Arrow Biplane

differs somewhat from previous products of the German Sommer Aircraft Works, and was specially built for this year's Prince Henry Circuit. It is chiefly interesting on



33. The Sommer biplane.

account of the fact that it is designed to take a rotary engine, a departure from usual German practice.

Aerodynamically this machine presents but little in the way of novelty, being characterised by the usual form of backswept wings, of which the upper plane is of slightly greater span than the lower one. The top plane is divided in the centre, where its two component parts are attached to a *cabane* of the monoplane type, formed by four steel tubes resting on the upper *longerons* of the *fuselage*. The lower plane is set at a small dihedral angle, and is attached by quick-release devices to the *fuselage*. In designing this machine great attention has been paid to accessibility and ease of dismantling, an operation requiring only a few minutes' work.

Mounted between double bearings in the nose of the *fuselage* is a 100 h.p. Gnome engine, covered in on the

sides by an aluminium shield in the bottom of which openings have been cut out in order to allow exhaust gases to escape. Immediately behind the engine are the petrol and oil tanks. To the rear of them are the two seats, arranged tandem fashion, the pilot occupying the rear one, from where he has an unrestricted view in a downward direction.

The stern post of the *fuselage*, which takes the form of a steel tube, is continued upwards to act as a pivot for the balanced rudder. No fixed vertical tail fin is fitted. The horizontal stabilising plane is mounted on the gunwales of the *fuselage*, and has hinged to its trailing edge a divided elevator.

34. The Union Arrow Biplane has its main planes sloping backwards at a very pronounced angle. Its *fuselage*, which is of rectangular section, is very deep and narrow, and tapers to a vertical knife-edge at the rear, where are carried the tail planes, which consist of a fixed stabilising plane mounted on top of the *fuselage*, a divided elevator, and a vertical fixed fin, to the trailing edge of which is hinged the rudder.

The chassis is of a very simple type, and consists of two pairs of steel tubes, each pair of which forms a "V" as seen from the side. The tubular axle rests in the angle between the chassis struts, from which it is sprung by



34. The Union Arrow biplane.

means of rubber shock-absorbers. In addition to the slope backwards and the dihedral angle, the main planes are heavily staggered forward.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Eastchurch Flying Grounds.

Naval Flying.—There was a good deal of flying last week, 2 Bristol tractors, Bristol scout, Vickers gun machine, Sopwith tabloid, Flight Com. McClean's Short, and 1, 2, 62 Shorts.

Civilian Flying.—Mr. Alec Ogilvie made a couple of fine flights on his 35 h.p. Wright.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday last week, Lieuts. Allen, Giles, Perry, Haines, Riggall and Rosher, and Messrs. Carabajal, Easter and Polehampton straights with Instructors Russell and Winter. Lieut. Strong solo

straights. Lieuts. Hope Vere and Whitehead and Mr. Strickland solo circuits.

Tuesday, Lieuts. Giles, Haines, Perry, Riggall, Rosher, Allen, and Messrs. Carabajal, Morgan, Polehampton and Easter straights with Instructors Manton, Russell and Winter. Mr. Crowe completed tests for *brevet* and gains certificate. Lieuts. Strong and Whitehead solo straights. Lieut. Whitehead going in for *brevet* tests and also gaining certificate.

Wednesday, Lieuts. Allen, Giles, Haines, Perry, Riggall and Rosher, and Messrs. Carabajal, Morgan, Polehampton, Easter and Greenwood straights with Instructors Russell, Shepherd and Winter. Mr. Strickland solo circuits and eights. Lieut. Strong and Mr. Mumby solo circuits. Lieut. Hope Vere circuits, eights, *vol plané*, &c., gains his certificate.

Thursday, Lieuts. Giles, Haines, Allen, Perry, Riggall and Rosher, and Messrs. Carabajal, Easter, Greenwood and Stalker straights with Instructors Manton, Shepherd and Winter. Lieuts. Rosher and Strong and Messrs. Morgan and Mumby solo circuits. Messrs. Strickland and Wiles eights, &c.

Saturday, Lieuts. Allen and Rosher solo straights. Lieut. Strong and Mr. Strickland circuits. Lieuts. Allen, Perry, Giles, Haines and Riggall, and Messrs. Polehampton and Carabajal straights with Instructors Manton and Russell.

Beatty School.—Monday, last week, Messrs. Roche Kelly 23, Smith 15, Whittaker 15, Virgilio 15, Lord 15, Hornby 17, Rimington 5 and 8, Parker 15.

Tuesday, Messrs. Smith 15, Lord 15, Lieut. Rimington 10, Messrs. Whitehead 15, Jenkinson 15, Fletcher 15.

Wednesday, Messrs. Roche Kelly 15, Whittaker 25, Elverson 4, Virgilio 15, Hornby 15, Gardner 15, Aoyang 15, Parker 18 and Lieut. Rimington 15.

Thursday, Messrs. Smith 5, Leong 5, Lord 5 and Beard 5.

On Wednesday morning, Mr. W. Roche Kelly flew for his certificate, and took same in fine style, attaining 2,000 ft. in his altitude test, and making a spiral *vol plané* landed on the mark.

No school held during week-end owing to bad weather.



Mr. E. P. Roberts, who has recently passed for his *brevet* at the Pashley Bros. School, Shoreham Aerodrome.

British Caudron School.—Monday, last week, school was out at 6 a.m. under the instruction of R. Desoutter and R. M. Murray. Mr. Legh rolling, R. Desoutter on 60 with pupils, 20 mins. flight. Evening, Messrs. Henderson, Burke and Ivermee rolling practice.

Tuesday, school at 5.30 a.m. Instructors R. Desoutter and R. M. Murray. Messrs. Henderson, Legh, Burke, Abbott, and Dr. Christie rolling practice. Evening, Dr. Christie and Messrs. Johnston, Henderson, Barfield, Legh, Ivermee and Moon rolling practice.

Wednesday, at 5.30 a.m., R. Desoutter 20 mins. flight on 60. Pupils rolling: Messrs. Legh, Henderson, Christie, Moon, Ivermee, Johnston and Barfield. Mr. Abbott doing straights. Evening, Messrs. Ivermee, Leigh, Johnston, Christie and Barfield rolling practice.

Thursday, at 5.30 a.m., pupils rolling: Messrs. Legh, Ivermee, Johnston, Barfield, Dr. Christie and Henderson.

Mr. Abbott doing straights. Mr. Legh making exceptional progress. Evening, Messrs. Legh, Ivermee, Johnston, Dr. Christie and Henderson rolling practice. Mr. Abbott doing straights. R. Desoutter, 60, reaching to a height of 1,500 ft., afterwards passenger flights to Messrs. Abbott and Ivermee.

Friday and Saturday. Weather too bad for school work.

Hall School.—Tuesday, last week J. L. Hall in charge; E. Brynildsen (Norwegian pupil) four straights.

Wednesday, J. L. Hall instructing; E. Brynildsen four straights and one short flight.

Thursday, Mr. Clappen instructing; J. Rose out on No. 2 Caudron, four straights and two flights at 10 feet; E. Brynildsen six straights, improving. In evening, Amelie Cini in charge; E. Brynildsen four straight flights with improved landings.

Friday and Saturday, wind and rain.

✱ ✱ ✱ EDDIES.

SHOULD the story told about Lieut. Norman Spratt by the *Daily Sketch* be founded on fact, this well-known British pilot, who will be remembered as a very fine pilot of the Deperdussin monoplanes and Breguet biplanes, and later was entrusted with the work of testing new machines at the Royal Aircraft Factory, has distinguished himself in a highly original manner.

According to the *Daily Sketch*, Mr. Spratt was reconnoitring at Montmorency, and, sighting a German airman, gave chase and rose above the enemy, making him understand that he was covered by a gun. The German pilot, whose name is given as Heisden, offered (probably by means of one of those undescribable German gestures) to surrender, and planed downwards, but as he neared the ground he accelerated, and made a dash for liberty. Spratt promptly dropped on him at a height of 100 ft. The report adds that the German was taken to hospital (small wonder!), and that Spratt sustained slight injuries to his right arm.

Of course, we are all confident that the Germans will be "sat on" ultimately, and it is inspiring to know that some of them are already being so, literally. Whether the story be true or not, those of us who knew Spratt cannot help saying that it is 'Just the sort of thing 'Jack' Spratt would do.'

✱ ✱ ✱

As recorded in "Eddies" some time ago, Mr. Beatty has been busily engaged on the design of an engine, or more correctly speaking of two engines, one 40 h.p. vertical four-cylinder, and an 80 h.p. eight-cylinder Vee type. The drawings are completed, the various parts are now being manufactured, and it is expected that the first engine will be in a machine and ready to fly in about three weeks' time. From the drawings it appears that the new engine has been designed from an aviator's point of view, so to speak; that is to say, it has evidently been thought out by a practical man to meet the requirements of an aviator, and all parts that are likely to cause trouble have received careful attention, and an effort made to obviate, by suitable design, any trouble due to the coming adrift of minor parts. Although Mr. Beatty's reason for building his own engines is chiefly that of being independent of other makers, he has not, of course, any very deeply rooted objection to selling his product, and as there would seem to be a great demand for suitable British-built engines at present, and Beatty proposes to sell his at what appears to be a reasonable figure, he

should be doing good trade with them shortly. Provided always, of course, that they prove as successful as an inspection of the drawings for them leads one to expect.

✱ ✱ ✱

Practical man that he is, Beatty proposes to test his engines in actual flight on the Wright machines, as he contends that this is a better method than to try them out on a test bench, where the conditions are not and cannot be the same as those obtaining in actual flight. One of the points which has been studied in the design of these engines is the standardisation of the cylinders, which are made interchangeable, so that it is possible to take a cylinder out of one engine and replace it with a



Lieut. Norman Spratt, R.F.C.



Three-quarter front view of the L. and P. biplane.

"Flight" Copyright.

cylinder from another with a minimum of trouble and delay. In this manner it is anticipated that a considerable amount of valuable time will be saved, and the pupils will not be kept waiting. You see, Beatty anticipates rather a rush of pupils, in fact they are already pretty busy up there now; only the other evening the last pupil returned after dark, the searchlights being put into action to help him judge his landing.

x x x

A new machine, which is nearing completion at the Grahame-White works at Hendon, should prove a very valuable addition to the 'buses already available for school work. It is a biplane of the "pusher" type, but will differ from the other school machines in that no front elevator will be fitted. At the rear of the nacelle is mounted a 60 h.p. Le Rhone engine, and the tail planes, which are carried on an outrigger of the usual type, consist of two fixed tail planes, a single elevator and twin rudders.

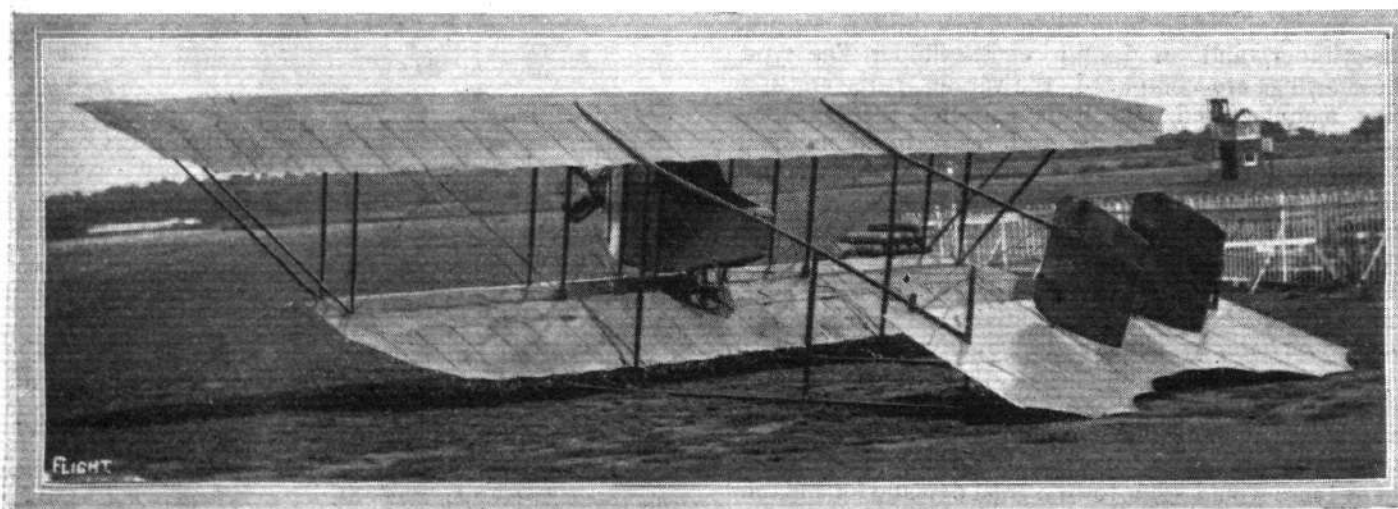
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Messrs. M. J. Lindsay, M. G. Smiles, and W. Warren, who in combination are the London and Provincial Aviation Co., are to be congratulated on the first machine they have turned out. Although not claiming any high originality for their first-born, which, as mentioned in "Eddies" a short while ago, in its general appearance is

very similar to the Caudron biplanes, these collaborators have turned out an excellent job, the workmanship of which is of very high quality. On a trial flight the other day the 'bus lifted remarkably well, and the new school should soon be busily at work with pupils, especially as another machine is already being completed with all possible speed. The suitability of machines similar to the L. and P. for instruction purposes, even when fitted with a low-powered engine, has already been amply proved. Under the instruction of Warren, who obtained his "ticket" at the Caudron school quite a long time ago, and has had long experience in constructional and repair work, and who will be assisted by Smiles, who "graduated" from the G.W. school, pupils joining the L. and P. School should make as rapid progress as is consistent with thorough tuition.

x x x

So many rumours are in the air in these days, that it is difficult to know what to believe, but the following concerning a well-known British aviator sounds quite probable, especially to those who happen to know the aviator in question. Whilst motoring in Belgium Mr. X had his Rolls-Royce commandeered, and as he was proceeding on his journey by means of the running gear Nature had provided him with he saw a motor bike standing up against a fence, apparently doing nothing in particular. Although it was rather a "come



Three-quarter rear view of the 35 h.p. L. and P. biplane.

"Flight" Copyright.

down" from a Rolls-Royce to a two-wheeler, Mr. X decided that it was better than walking, anyway, and promptly annexed it. Spinning along at a merry pace he came across a 90 h.p. Mercedes which had apparently been left by some German officers outside an hotel whilst they were sampling the wine of the country. Nothing loth to exchange his mount, Mr. X "commandeered" the Mercedes and left in its place the motor bike. One can imagine the expression on the faces of the "culture spreaders" as they saw their 90 h.p. reduced to about $2\frac{3}{4}$ h.p.

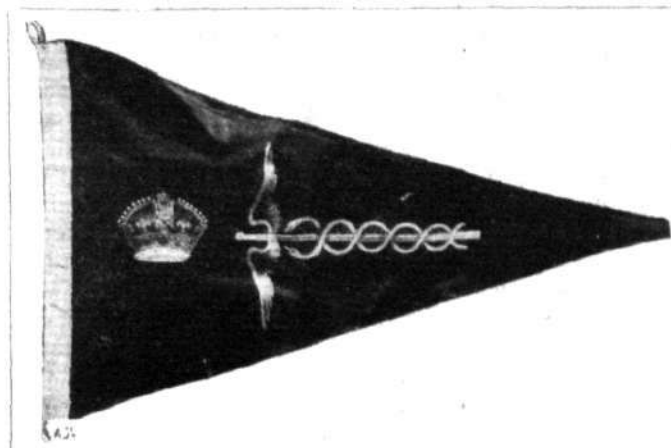
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We are always very pleased to hear from our pilots at the front, especially when, as in this case, the communication is sent by such an old friend as Louis Noel. Writing from St. Cyr, on a French military post-card, Noel sends us the following message: "Only a few lines. We are all happy. Since 10 days we have had many things to do, and have every day some 2-3 hours' reconnaissance. It is fine! Flown 60 kilometres over German lines the other day. Last week I had a bad auto. smash, but am all right now, and flying every day. Met many English aviators, all are all right. Kindest regards from Louis Noel."

x x x

The only flight at Hendon on the afternoon of Saturday last was made by Mr. Hawker on his Sopwith biplane. In spite of the rain, which kept everybody else on *terra firma*, he made a flight of about ten minutes' duration, giving some very fine demonstrations of steeply banked turns, some of which must have been in the neighbour-

hood of 90°. It appears to be almost impossible to overbank the Sopwith when doing a short turn, and it is highly amusing to see it sideslipping upwards when Hawker is going round a corner "all out." Several little alterations in the Sopwith were noticeable, as for instance



The Royal Aero Club Burgee, the design of which has been approved by His Majesty the King. The ground of the burgee is blue, the Royal Crown and caduceus being in gold.

the substitution of a Vee chassis for the usual skid and wheel type, whilst the covering has been taken off the rear portion of the body, Blériot fashion, probably in order to render the machine more sensitive to the controls.

"ÆOLUS."

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THE WORK OF THE ROYAL FLYING CORPS.

THE following is the full text of the recognition given to the splendid work done by the Royal Flying Corps at the front, in the summary of Field-Marshal Sir John French's report, under date September 11th, as issued on Monday last by the Press Bureau:—

"Quite one of the features of the campaign, on our side, has been the success attained by the Royal Flying Corps. In regard to the collection of information it is impossible either to award too much praise to our aviators for the way they have carried out their duties or to over-estimate the value of the intelligence collected, more especially during the recent advance.

"In due course certain examples of what has been effected may be specified and the far-reaching nature of the results fully explained, but that time has not yet arrived. That the services of our Flying Corps, which has really been on trial, are fully appreciated by our Allies is shown by the following message from the Commander-in-Chief of the French Armies, received on the night of September 9 by Field-Marshal Sir John French:

"Please express most particularly to Marshal French my thanks for services rendered on every day by the English Flying Corps. The precision, exactitude, and regularity of the news brought in by its members are evidence of their perfect organisation and also of the perfect training of pilots and observers."

"To give a rough idea of the amount of work carried out, it is sufficient to mention that, during a period of

twenty days up to the 10th September, a daily average of more than nine reconnaissance flights of over 100 miles each has been maintained.

"The constant object of our aviators has been to effect the accurate location of the enemy's forces, and incidentally—since the operations cover so large an area—of our own units. Nevertheless the tactics adopted for dealing with hostile aircraft are to attack them instantly with one or more British machines. This has been so far successful that in five cases German pilots or observers have been shot in the air and their machines brought to the ground.

"As a consequence, the British Flying Corps, has succeeded in establishing an individual ascendancy which is as serviceable to us as it is damaging to the enemy. How far it is due to this cause it is not possible at present to ascertain definitely, but the fact remains that the enemy have recently become much less enterprising in their flights. Something in the direction of the mastery of the air has already been gained.

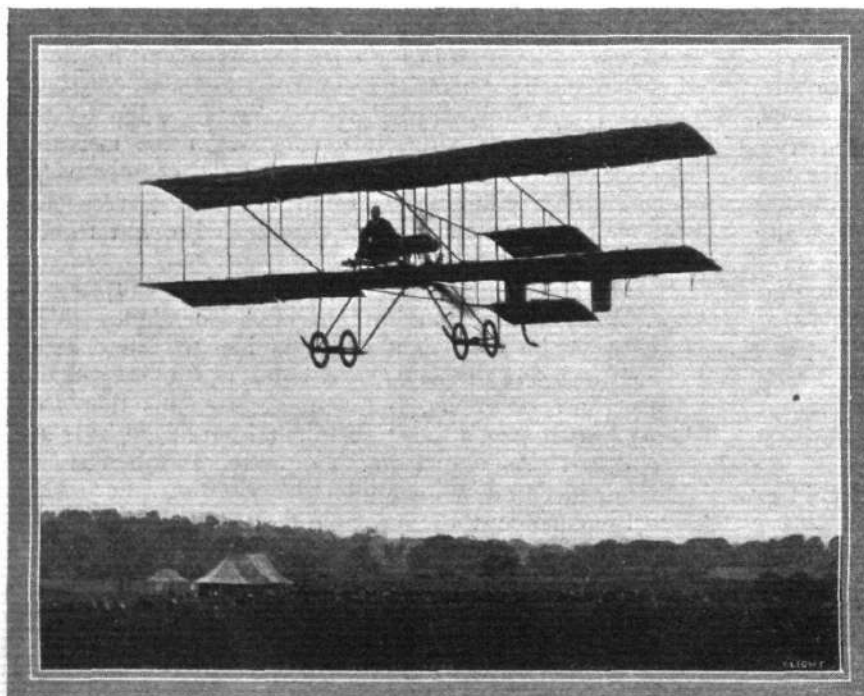
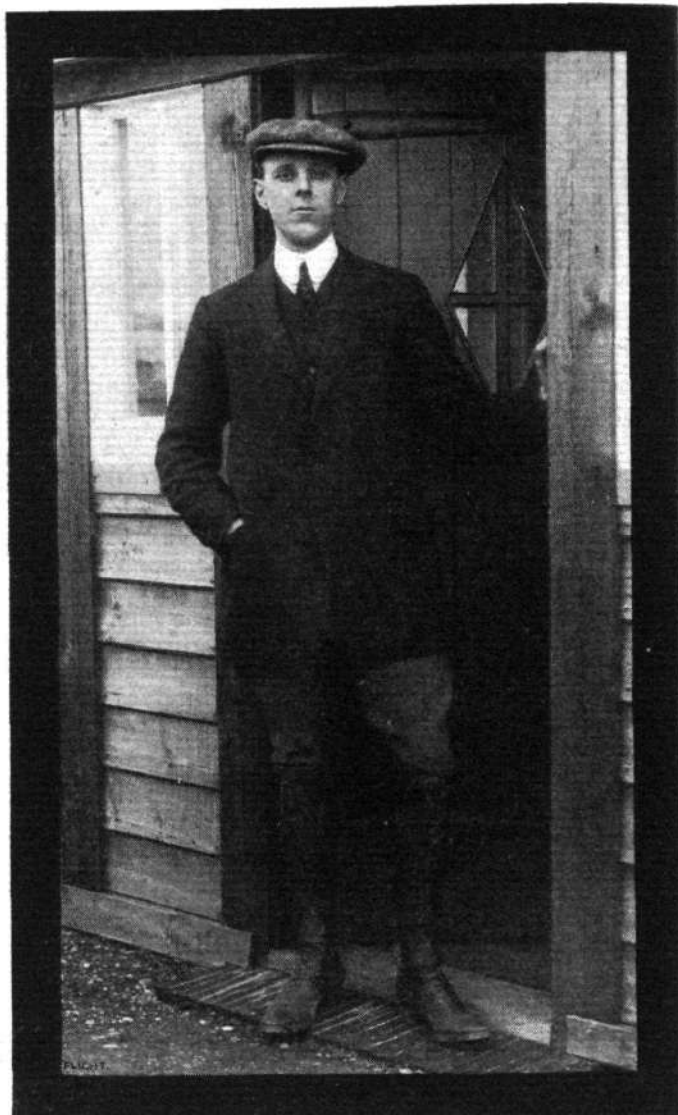
"In pursuance of the principle that the main object of military aviators is the collection of information, bomb-dropping has not been indulged in to any great extent. On one occasion a petrol bomb was successfully exploded in a German bivouac at night, while, from a diary found on a dead German cavalry soldier, it has been discovered that a high-explosive bomb thrown at a cavalry column from one of our aeroplanes struck an ammunition wagon. The resulting explosion killed fifteen of the enemy."

DEATH OF MR. RICHARD T. GATES.

It is with profound regret that we have to record the death of Flight Lieutenant Richard T. Gates, which took place at the London Sick Asylum on Monday last, following on an accident which occurred at Hendon late on the previous Thursday. Lieut. Gates had only recently been appointed to the R.N.A.S. for special work connected with the training of pilots for the Royal Navy, and while on duty on the night of the accident he made an ascent on a Henry Farman machine. On returning to the aerodrome difficulty was experienced in landing, either because, in the darkness, the pilot was unable to see the ground clearly or, as some think, owing to the glare of the searchlights confusing him. In any case, it would appear that the machine failed to flatten out at the right moment; it struck the ground at a bad angle, and was smashed, the pilot being pitched on his head, and sustaining injuries to which he succumbed, despite the most expert surgical attention.

His appointment to the R.N.A.S. did not represent the first time he had served his country, as Lieut. Gates fought through the war in South Africa as a trooper in the Yeomanry; he had his horse shot under him and sustained some injury, which, at times, troubled him to the day of his death. It was as the manager of the London Aerodrome at Hendon, however, that he was best known in connection with aviation; it was principally due to his foresight and energy that the famous aerodrome enjoyed the popularity that it did. Starting on what must have been a stupendous task, he turned an open and rather moist meadow into a fashionable resort—an "Ascot in London"; while on the other hand, the half a dozen old sheds grew into almost a mile of hangars and workshops of sufficient importance to become the "headquarters" of popular aviation in this country.

As a man, Mr. Gates shared with others of his temperament the distinction of being often misunder-



"Flight" Copyright.

A reminiscence of the late Mr. R. T. Gates flying the old Farman school-bus at Hendon in July, 1912. Mr. Gates obtained his brevet (No. 225) on June 4th, 1912, on the Howard-Wright at Hendon.

stood. Bluff to a degree, he never wasted a word, but gave his orders and directions crisply, to the point, and altogether in a manner likely to lead a stranger to suppose him a Martinet of the very first order, though, as a fact, a more kind-hearted man never lived. On one point all those who knew him will agree—he was never known to go back on his word once given, verbal or written. If he said "Yes" it was yes, and, in the same manner, when he gave an order it had to be carried out. Born in 1876, he died at an age far too young to be spared, and in his death aviation mourns one of its strong men. Hendon will greatly miss him, and difficulty will be experienced in the search for a successor of his worth.

He leaves a widow and two children—one only a few months old—to whom we offer our deepest sympathy in their great bereavement.

At the inquest held on Wednesday last, the evidence showed that after the machine had circled the aerodrome three times it struck the ground with such force that the pilot was thrown a distance of thirty feet. A verdict of "Accidental death" was returned. The funeral took place on Thursday with full naval honours.

AIRCRAFT AND THE WAR.

AGAIN this week we are able to record some official news as to the doings of the Royal Flying Corps in France: on page 963 will be found that part of the summary of Sir John French's despatch which tells of the excellent work done by the flying officers as well as the eloquent testimony of General Joffre, the French Commander-in-Chief, as to the valuable services rendered by the British pilots. Sundry other reports as to what is being done by our pilots on active service are also available from unofficial sources. Thus a correspondent of the *Daily Telegraph*, writing from Paris on the 9th inst.:

"The whirring of an aeroplane. Field-glasses have been left behind, and we instinctively shrink into the car, uncertain whether the huge dragon-fly is friend or foe. Suddenly it descends in graceful spirals to the ground, and with delighted eyes we see that it contains a British airman, while a few hundred yards further on we find ourselves in the repairing camp of —, where are not only French aviators, but a strong detachment of our own flying corps. Finer-looking men than these latter I have never seen. Well set up and tanned to a deep bronze, our British airmen are the personification of soldierly efficiency grafted on British physique. In command is —, who holds the English record for long-distance, and he may well be proud of his corps. We exchange greetings all round, have a hasty glance through the camp, and are regaled with accounts of German bomb-throwing at Compiègne, and of the superiority of our air-craft and its navigators over any others—which we can well believe."

Another side of the pilot's work is seen in the following story as told by Sergeant Werner, who is said to have been the first German to fly over Paris, and told by Mr. Karl von Wiegand of the United Press, who is now at Liège:—

"I received orders," Werner said, "to locate the English and French forces, and, accompanied by another officer as an observer, I flew southward from Mons, following the main road leading to Paris which led along the edge of a magnificent forest in which more than forty thousand inhabitants had taken refuge."

"After flying for an hour, we located the English, and saw where the French artillery was taking up a new position, together with the English, and preparing to make a stand. Having obtained the desired information the observer with me made a rough sketch. I turned the monoplane to start on the way back, when suddenly I looked up and saw a thousand feet above us a Bristol biplane. It was pursuing us. We were 5,000 ft. up, but my monoplane was slower than the Bristol, which soon caught us up. I tried in vain to climb above the Bristol, which was directly over us. I expected every moment a bomb to hit us."

"The English machine swooped lower and lower, until it was only 500 ft. directly over us, and I felt like a bird when an eagle or a hawk is sweeping down on it. I thought it was getting nearer in order to get a better aim for a bomb. The experience was absolutely nerve-wracking. Both the other officer and myself began shooting automatic pistols at our pursuer, as it was now evident that the Englishman had no bombs. Fortunately for us, our propeller was in front, and they could not shoot at us that way. The biplane suddenly veered to the side and lowered to about 150 ft. higher than we were and 500 ft. distant. The pilot and his observer began shooting at us, but the noise of the motors drowned the reports. We could, however, see the flashes of the pistols. The duel continued for half an hour. Evidently the Englishmen, while speedier than we, were armed only with pistols. Minute after minute, each of which seemed hours, I began to feel helpless, and felt ourselves slower and unwieldier, and thinking every moment would be the end. My observer touched my shoulder, and pointed up."

"I looked, and there a thousand feet higher, coming at a tremendous speed, was a small French Blériot, like an eagle, to join in the attack. It was speedier than the Bristol, and soon was encircling us, crossing before us, swooping down and then away, vivid flashes showing that it was firing at us. I thought our end was certain then, when our troops suddenly appeared beneath, firing at the Blériot and the Bristol. They immediately turned and disappeared."

Mr. Wiegand added:—"Werner told me that he dropped three bombs in Paris during his first flight, one of which lay unexploded on the roof of a house in one of the boulevards. He carries in his monoplane twelve 1 lb. and 4 lb. bombs. He says that as an

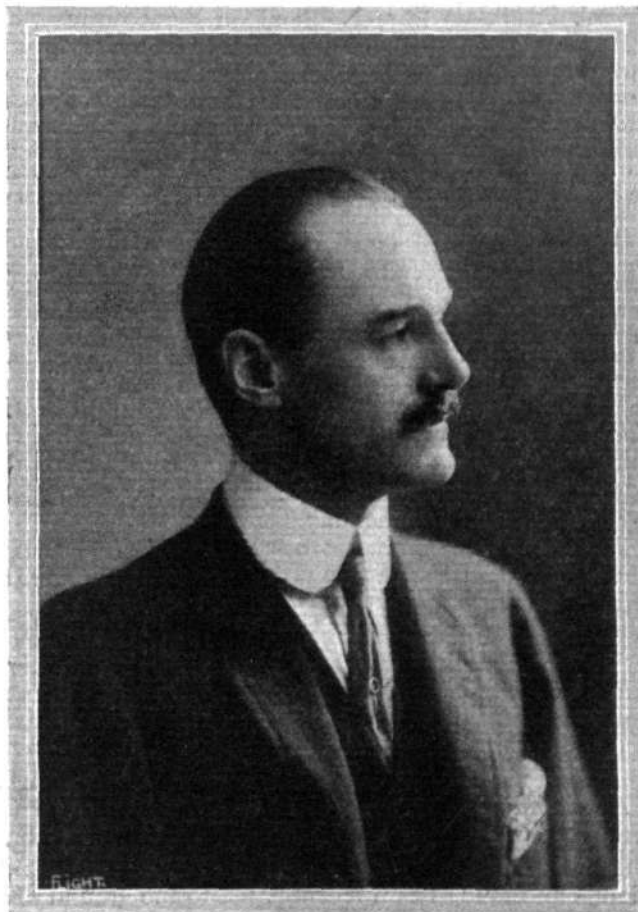
offensive weapon Zeppelins are far superior to aeroplanes. From sources which I may not mention, I am told that the Germans are building Zeppelins very rapidly, and that they have many more than is generally known."

In his account of the battle of Meaux, Mr. G. Ward Price of the *Daily Mail* recounts how he met a middle-aged cyclist who said:—

"I cycled out to see something, and I was talking to an officer at the cross-roads down there when one of those dirty aeroplanes signalled us to a battery, and they sent a shell right on top of us. It killed the officer's horse and carried away my cap; I thought that I was dead."

It was reported from Paris on the 10th inst. that a German aeroplane which had dropped two bombs on the railway line near Chalons camp was brought down by French soldiers. The pilot was killed and the observer wounded. The latter, who understood a little French, expressed great surprise on learning that the British were fighting with the French and that the Russians had captured Lemberg.

It also was stated on this date that five persons were killed by the fall of a French military aeroplane in Vincennes Wood on the previous Tuesday. The pilot was Corporal Prudhommeau, who had been promoted a few days before for his exploit in dropping bombs on the German airship shed at Metz, by which it is claimed that he destroyed a Zeppelin and two Taube aeroplanes. Pilot and observer were killed by the fall, and three passers-by by the explosion of several bombs which the airmen had on board.



Captain Robin Grey, Royal Flying Corps, who, it is reported, has been decorated with the Legion of Honour for distinguished services in the field. Captain Grey learned to fly at the Bristol School, and took his brevet at Brooklands on June 16th, 1913.

Another message from Paris on the same day said that among the German prisoners sent to Cholet were two lieutenant aviators who flew over Paris the previous week when they dropped bombs. The pilot is one of the best German military aviators, and is a "height record" man. The observer was recognised at Le Bourget Station by a reservist. Before the war broke out he was an accountant in a silk merchant's firm in the Rue du Sentier. He left Paris on the eve of the mobilisation. The population of Le Bourget tried to lynch him. Both aviators were captured at Orry la Ville, where they had been compelled to land owing to a breakdown of the engine.

On the same day news came from Amsterdam that a large German aeroplane has been shot at and brought down by the Belgians at Strypen, East Flanders, the incident leading to important captures. Three officers in it proved to be well-known experts from Krupp's, including Jacob and Scheljemk, who delivered the guns to the new Belgian forts a few months ago, and Von Metzen, prominent in all Krupp experiments. All of them were arrested.

A message from Petrograd on the 9th inst. states that after an attempted attack by part of the Austro-Tyrolèse corps near Ravarusska, a German aeroplane was captured at Zamostje.

In a report from Ostend, dated September 11th, regarding the movements of German troops from Brussels in a south-westerly direction, it was stated that their equipment included six wagons carrying material for filling and repairing Zeppelin airships.

In an account of the British advance along the valley of the Ourcq, telegraphed to the *Daily Telegraph* by Mr. W. T. Massey from Nanteuil on the 10th inst., the following reference to the work of German aeroplanes during the capture of Penchard was made:—

"The army doctor was wounded in the left shoulder, a bloody patch on his shirt and a hole in it betraying the spot. A bullet from a bomb dropped by an aeroplane did the damage, and the shot was produced, and in this connection the artillery officer and the Zouave had much to say upon the efficiency of German aeroplane work. It was very deadly. Usually flying at a height of about 1,000 metres, an aeroplane would reconnoitre a position, drop a bomb, which did not often do much damage, and return to German lines. Almost invariably within half an hour the accuracy of the airman's report was proved by a galling artillery fire on the position. So often has this happened that when aeroplanes have been over French batteries, in woods or in hidden places, the gunners have abandoned their positions and sought new points of vantage."

Mr. Wm. Maxwell, another correspondent of the *Daily Telegraph*, in dealing with the German retreat, quotes the opinion of a Flying Corps officer, who passed him on the road, as to the flying Germans: "It will be a miracle if any of them get home again."

From Amsterdam on the 10th inst., came information that the German Emperor and the General Staff were in Luxemburg, the latter being quartered in the German Legation.

"During the night the Legation is guarded by aeroplanes, which probe the darkness with searchlights to prevent any hostile aeroplane from approaching the town. A Belgian and a French aeroplane, however, succeeded in dropping four bombs, but without doing serious damage."

According to a message from Amsterdam, dated the 11th inst., the German military aviator, Count Uxkull, who was well known for his flight from Dolberitz to Vienna and Buda-Pesth recently, fell to the ground while reconnoitring, and succumbed to his injuries. Flying Instructor Breton was killed at the same time.

Telegrams from North Holland state that a Zeppelin was seen cruising over Borkum on the afternoon of the 11th inst.

In a message from Petrograd, dated September 12th, Mr. B. W. Norregaard describes as follows an adventure of the French pilot, Poiret, who is now serving with the Russian army:—

"We rose to a height of about 5,000 ft. Fighting was in full swing. The captain had already made some valuable observations when the Germans, noticing my Farman machine, opened fire. A number of bullets pierced the wings of the aeroplane and others struck the stays, but we flew on. It was still necessary to ascertain the exact position of certain of the enemy's forces."

"Then the German artillery began. Shells burst near the machine, all round. Each explosion caused the aeroplane to rock terribly. It was difficult to retain control. Pieces of shells seriously damaged two stays. This fantastic dance in the air lasted twenty minutes. The captain was wounded in the heel, but continued to make observations. The machine was now much damaged, so we turned homewards and landed safely. I found ten bullet marks and two fragments of shells in the machine."

On the 11th inst., a German aeroplane is reported to have flown over Troyes and dropped several bombs, but nobody was injured. A French aeroplane chased the Taube, and managed to bring it down after a pursuit of several miles. The pilot and observer, a captain and lieutenant, were killed.

It was reported from Paris on Sunday that another German aeroplane had been brought down at Fontainebleau by dragoons, both airmen being killed.

In the long list of soldiers mentioned in despatches is the name of M. Brindejone des Moulinais, for scouting carried out under fire, his machine being struck by bullets.

In an interview regarding the atrocities in Belgium, General von Boehn declared that Zeppelins have orders only to drop their bombs on fortifications and soldiers.

A semi-official statement issued in Nish regarding the Servian operations says that the Austrian-Hungarian army lacked nothing in its modern equipment, "the siege artillery, their gunboats, their searchlights and their aeroplanes were relied on to facilitate a success concerning which no one entertained the slightest doubt." It also states: "The enemy is continually making every effort to ascertain our offensive movements. Every day his aeroplanes fly over our territory."

From Amsterdam it is reported that on Friday night, a Taube aeroplane appeared over Antwerp, and was fired upon. One officer was killed and another wounded. Both had franc notes in their pockets, and it is reported that these notes are forgeries, printed by the Germans, and bearing the signature of the directors of the National Bank.

The following account of the capture of a Zeppelin airship and the "cultured" behaviour of the occupants, as seen by the assistant stationmaster at Mlava, on the Russo-Prussian frontier, was telegraphed to the *Daily Telegraph* from Moscow on Monday:—

"We were on this platform," he said, "when the Zeppelin appeared above us. It was flying very low—about 500 ft. from the ground. Near the town of Vollaou our artillery opened fire upon it, damaging three of its motors, but it kept going with the remaining one. Our soldiers, who occupied the station, then opened fire, and the Zeppelin hoisted a white flag, whereupon a Russian officer who was standing by me ordered them to cease fire."

"The soldiers did so, but the Zeppelin immediately hurled a bomb. This scoundrelly act was seen by everybody present, among them a British officer attached to our army. The effect of the explosion was terrible, and many people were wounded. The rest of us rushed towards the interior of the station, through the door, and even through the windows. The British officer alone, with remarkable coolness, remained where he was."

"After the first bomb the Zeppelin threw three others, killing in all twenty-three persons and wounding sixty. One of our batteries opened fire on the airship and damaged its fourth motor. The airship then went away for a short distance, and came to ground three and a half miles from the station. Our troops hastened

towards it, but the Germans succeeded in burning and so damaging the equipment and the apparatus that there only remained the aluminium envelope.

"The Germans were made prisoners. They comprised four officers and four soldiers, of whom two were wounded. Two of the soldiers tried to escape, but they were captured."

In the *Daily Sketch* of the 11th inst. was given the following message from their Paris correspondent:—

"Mr. Gordon Bell, the British airman, whom I met yesterday a good way from here, told me a thrilling story of his escape after he had been hit and his machine disabled in the Battle of Mons."

"While he was scouting, at a height of 4,000 ft., he was hit on the foot by a bullet."

"He immediately went up to about 5,000 ft., but again some German found the mark, the bullet this time striking the engine and smashing it."

"I was at this time," he told me, "right over the German position. I turned as quickly as I could and steered my disabled machine in the direction of the British lines."

"It was touch and go, but luckily I was high enough to plane three or four miles before dropping."

"I set off to tramp to the British lines. I had not gone far before noticing in a field on the left a small mound topped by a little wooden cross."

"Something prompted me to investigate. On the cross was the inscription in German: 'Here lies an English airman.' Near by were the remains of a smashed machine."

"I got to the British lines safely, and was invalided home. But I am anxious to get back, and I don't think I shall be long."



Tales from the Front.

WITH reference to the quotation from the *Daily Telegraph*, which was given in our last issue, and which set forth an experience of John Baker of the Royal Flying Corps, who was said to be lying in hospital at Netheravon, we have received the following from a correspondent at Netheravon:—

"The fact that there is nothing in the way of a hospital here, and also that there is no one to answer the description of a *mechanic* by the name of Baker, neither here nor at Upavon Hospital, leads me to believe the publication of the afore-mentioned letter is either founded on false statements, in order to create a sensation, or that there has been some great misapprehension somewhere or other. I should be extremely glad if you could find something more definite about it."

Perhaps an enquiry at the original source of the information may throw a little light on the mystery.

Seaplane Workers not to Enlist.

It is stated that an order has been issued by the War Office that on no account are men working at the yards of Messrs. J. Samuel White and Co., the well-known builders of seaplanes and torpedo craft, &c., to be allowed to enlist.

Letters for R.N.A.S.

THE Secretary of the Admiralty announces that if relatives or friends of officers and men of the Royal Naval Air Service are in doubt how to address correspondence to them, letters may be sent to the Central Air Office, Sheerness, to be forwarded.

More "Shell" Donations.

THE British Petroleum Co., Ltd., have contributed £100 to the Red Cross Society and £100 to the Belgian Relief Fund. This is in addition to the £1,000 contributed to the Prince of Wales' Fund by the Company.

"Strategy," a Game of the War.

WE have just received from Messrs. J. Bonn and Co., Ltd., of 97, New Oxford Street, W., an interesting war novelty in the form of a game, entitled "Strategy," in which the scenes of the present struggle between Germany

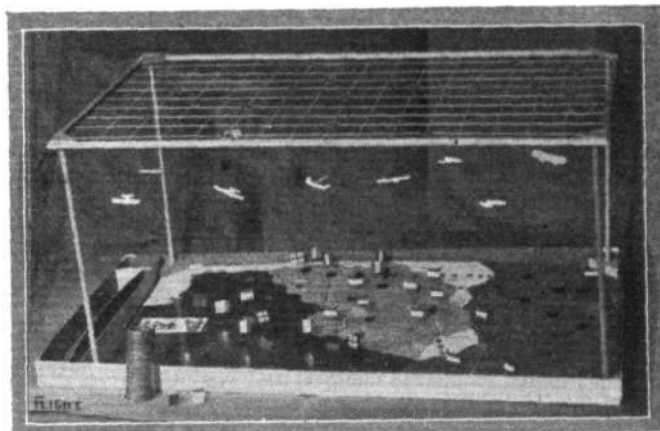
A drummer boy, who has arrived in London wounded, relates that while he was carrying ammunition to the trenches at Mons the aeroplanes dropped fireworks on them. They kept flying round and round up high until they had given the range.

Another soldier who was wounded at Mons, in a letter to his mother, says: "We fired on a German airship (?) on Saturday night, but he got away. We got him four days afterwards. He had a little boy, nine years old, up with him. A French aeroplane brought him down. They fought in the air for half an hour."

According to the *Daily Telegraph*, a member of the Royal Flying Corps, who has been invalided home at Blyth, Northumberland, relates that while reconnoitring with an officer 1,200 ft. above the enemy's lines at Le Cateau, about fifteen miles from the Allies' front, they met with a hail of bullets, which put the engine out of action. Volplaning successfully, the machine fell two miles from the enemy's lines. As Germans were approaching the officer set fire to the biplane, and, after hiding in disused houses and under hedges, where they abandoned their leather suits, they reached the Allies' lines. Both men were injured, and the officer had to carry his comrade for some miles.



and the Allies are reproduced in miniature. As in the real campaign, the success of the players in this game depends largely on "strategy," whilst aircraft also play a very important part. The material for the game consists of a base board having a plan of the actual theatre of the present warfare portrayed thereon, with most of the important towns clearly marked, and above it a "sky-way" for the aircraft. The latter are made up of half a dozen monoplanes representing the Allied aerial forces, and three Taube monoplanes and three Zeppelin dirigibles representing those of Germany. Flags are used to represent the different armies moving over the



Messrs. Bonn and Co.'s new Game of "Strategy," showing the Allied and German aircraft in the "sky-way."

"land," and their movements, together with those of the aircraft, are governed by the throwing of a dice. We have not the space to give the rules of the game in full, but it may be said that while it is simple to play yet at the same time it involves no small amount of skill. The inventors and producers of "Strategy," Mr. C. J. Lane and Mr. A. E. Jones, are fortunate in having such a well-known model aeroplane firm as J. Bonn and Co., Ltd., to market this game, which is a British article throughout—games of this description having hitherto generally emanated from Germany! The price is 2s 6d.

"THE AEROPLANE OF TO-MORROW."

VARIABLE SURFACE, CAMBER AND INCIDENCE, AND THEIR EFFECT ON SUSTENTATION, SPEED AND SAFETY.

By L. DE BAZILLAC, Engineer, Ecole Supérieure d'Aeronautique de Paris.

(Continued from page 947.)

Horizontal Flight.—The total resistance to motion in horizontal flight is given us by the relations found above for ascending flight

$$H - W \sin i = R_x = (K_x S + \lambda) V^2$$

$$W \cos i = R_y = K_y S V^2$$

in which $i = 0$. Therefore $W = K_y S V^2$ and $R = (K_x S + \lambda) V^2$.

Hence, if we eliminate S , $R = W \frac{K_x}{K_y} + \lambda V^2$ where λ the variable coefficient of total passive resistance.

The resistance to flight R , as a function of the speed, is graphically represented (Fig. 7) by curves, of which the lowest corresponds to the minimum of $\frac{K_x}{K_y}$, which is obtained for the optimum angle of the wings, taken separately.

As the normal speed of horizontal flight corresponds to the intersection of the curve of the thrust of the propeller, $H = \psi(V)$, with those of the R , it is evident that the speed V of the horizontal flight for the same weight, surface, and motive power, will be maximum when the optimum angle is utilized, giving the curve $R = W \frac{K_x}{K_y} + \lambda V^2$, which is the lowest.

All this is independent of the size of the surface.

But the equation for sustentation shows us elsewhere that the velocity of translation must be as much greater, for the same angle

surface vary as a function of the angle of attack in such a way that the curve of the variations of K_x/K_y has a radius of curvature as great as possible in its lower part.

We thus obtain, at will, in the part available, the most useful curve. This curve represents the flying quality of the wing. The variation of surface presents, then, the great advantage of being able to furnish, for each angle of attack, the wing with the best camber, also the best angle of flight, and, consequently, the highest speeds.

Note.—We have stated that, in order to attain the highest speeds, the surface must be reduced to the strictest possible minimum. It is to be noted that beyond a certain limit this is to the detriment of the aerodynamical efficiency of the machine.

The equations which define horizontal flight

$$W = K_y S V^2$$

$$P = (K_x S + \lambda) V^3$$

give, for the power, $P = \frac{K_x}{K_y^2} \cdot \frac{W^2}{S V} + \lambda V^3$. If the machine has a smooth aerofoil, λ depends only on the body, and in order to fly at the speed, V , the machine of given weight, W , demands a motive power, P , as much smaller as S is larger. Every reduction of the aerofoil would entail, in this way, an increase of power.

But if we take into account the roughness of the surface, λ includes

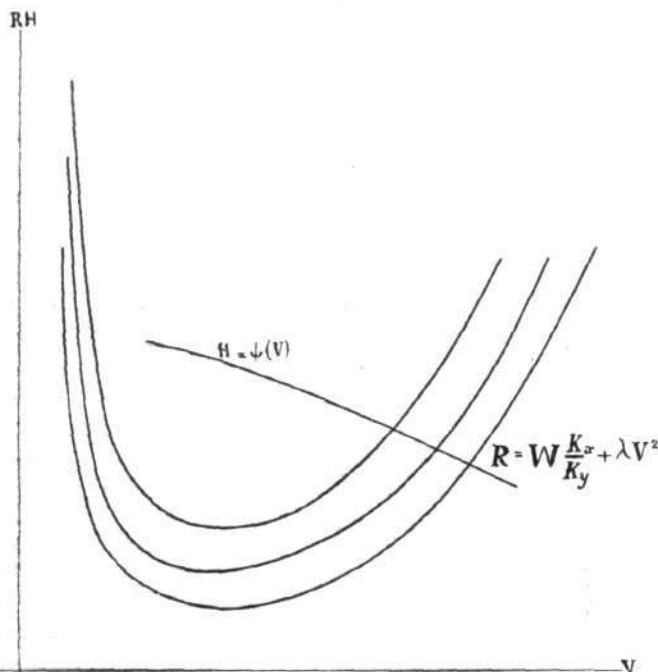


Fig. 7.

of attack, as the lifting surface is smaller. In order to obtain the highest speed, we must then reduce the surface to the lowest possible minimum. We shall give it, at the same time, the smallest possible camber, in order to diminish the lift.

If we draw the curve showing the variations of the ratio K_x/K_y as a function of the angle of attack for different cambers, we see (Fig. 8) that the minimum of this ratio, which is obtained for the optimum angle of the wings, is as much smaller as the corresponding angle of attack is smaller. As we can vary the camber at will, we can obtain the desired minimum, and, consequently, the angle of attack. We can further make the shape or curvature of the

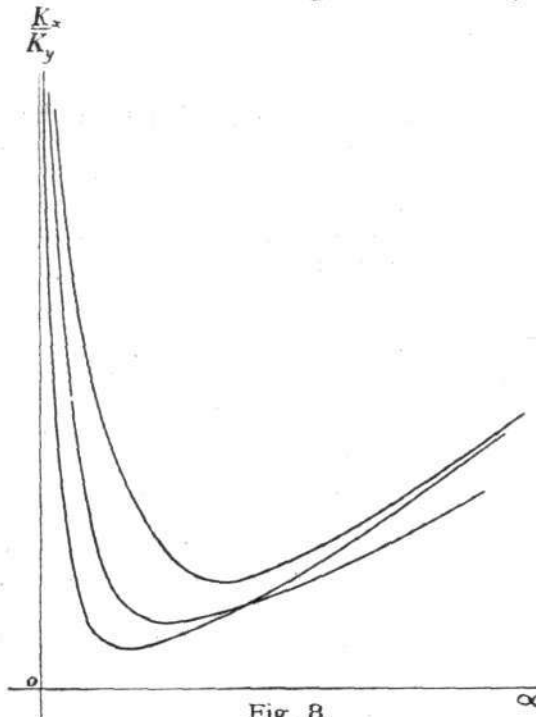


Fig. 8.

a term proportional to S , i.e., $\lambda = \lambda_0 + \lambda_1 K S$ and the power necessary in order that the machine given can fly at the speed V will be a minimum when

$$\frac{K_x}{K_y^2} \cdot \frac{W^2}{S V} = \lambda_1 K S V^3, \text{ i.e., when } S = \sqrt{\frac{K_x}{\lambda_1 K} \cdot \frac{W}{K_y V^2}}.$$

It will then be to our advantage, if the surface exceeds that limit, to reduce it to that value.

Beyond that value every reduction or augmentation of the surface will have a diminution of efficiency as a result.

The surface defined by the expression of S is, in every case, the optimum surface, or the most efficient.

(To be concluded.)

"The New Rake's Progress."

UNDER the above title *Punch* publishes this week a special supplement, embracing a series of remarkable cartoons which have appeared in its pages in the past years, illustrating the German Emperor's career. In the first of the series, issued as long ago as 1888, which, by special permission of the proprietors of *Punch*, we reproduce on page 953, is particularly interesting to readers of *FLIGHT*, and is almost prophetic in character. Besides this, in the collection is included the cartoon which upset

Wilhelm II to such an extent as to cause him to exclude *Punch* for a time from the Imperial Palace. The last cartoon exhibits the Kaiser to-day as "The world's enemy," and amongst other incidents, all admirably treated by *Punch's* cartoonists, Sir John Tenniel, Linley Sambourne, Bernard Partridge, Raven Hill, and F. H. Townsend, are the German lease of Kiau-Chow, the Kaiser's intervention in Morocco, his solicitude for Turkey, &c. To miss *Punch* any week is a loss. To this week's issue this applies doubly.

Models

Edited by V. E. JOHNSON, M.A.

The Building of My First Power-Driven Machine.

By LEONARD H. SLATTER.

PRIMARILY I must state that I was fortunate in securing a power plant that had proved itself both reliable and powerful. As is generally known, I obtained the plant from Mr. H. H. Groves, and would here like to give vent to my appreciation of the same. Although when I received the engine it was far from being new, nevertheless I have never experienced any trouble from it, although I must have run the engine dozens of times. The little trouble at the Welsh Harp is easily explained. It was due to the high wind prevailing on the day in question; it was necessary to pour in an overdose of the methylated spirits required to heat the lamp coils. The resultant flame, now larger than usual, played upon the shaft driving the pump, causing the soft soldered sleeve, which unites the two halves of the shaft together, to slip, thus preventing any water being pumped through to the boiler. Having obtained the engine, the next consideration was the machine to which it was to be fitted.

In its initial capacity, the engine was attached to the well-known canard monoplane built and exhibited by Mr. Groves, at the last Model Engineer Exhibition and also at the Royal Aero Show at Olympia. After much "tongue-wagging" with several well-known model celebrities, coupled with the fact that the K.M.A.A. stipulated that machines for the power-driven competitions were to be

weight of the plant was 1 lb. 10 oz. complete. The average thrust developed was distinctly over $2\frac{1}{2}$ lbs., and on one occasion reached 2 lbs. 14½ ozs. The duration of the run was just on 100 secs., during which time 6 ozs. of water and $2\frac{1}{2}$ ozs. of benzoline were consumed.

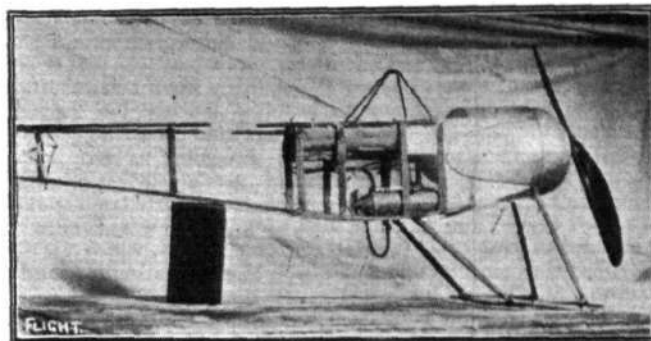


Photo by Mr. Conolly.

Fig. 2.—Mr. Slatter's power-driven model. This photo shows the result of the conflagration resulting from the initial run.

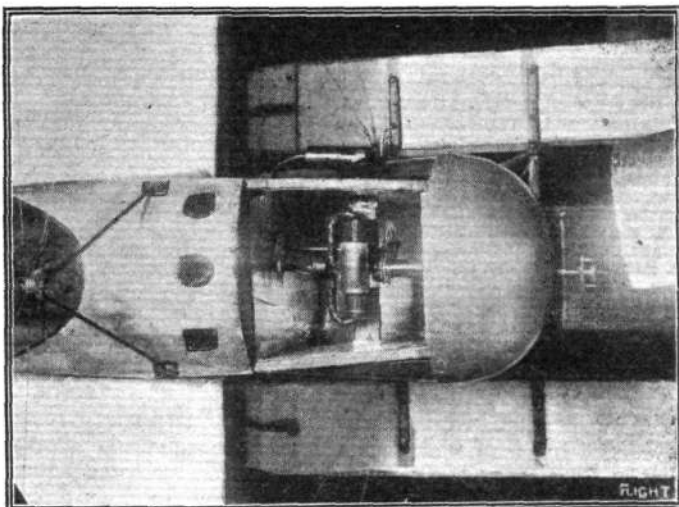


Photo by Mr. Conolly.

Fig. 1.—Mr. Slatter's power-driven model. The "engine room."

such that their designs should be applicable to full-size practice, I determined to build a tractor.

This at once necessitated various alterations in the arrangements of plant in general. In order to protect the engine, it was essential to keep this part at a little distance from the nose of the machine, which in turn meant an extension being made for the crankshaft in order to drive the propeller. This eventually took the form of a "muff" fitting over a central stock and driving off the two original driving pins.

The flash steam plant does not give you a concentrated weight, thereby causing the centre of gravity to be somewhat further back than one finds in full-size design, giving a corresponding greater set back to the wings, it being necessary to fly with a less angle of incidence on the tail than the main planes. Still I determined to have a shot at this type of machine, doing all I could to have the centre of gravity as far forward as possible. To the furtherance of this object the machine was to be fitted up initially as a hydro., thus having the extra weight of the floats forward. By means of this, together with a careful consideration of the general disposition of the plant, I was able to obtain a more forward centre of gravity than I dared to expect.

Of course, it was essential to know the exact power developed in order to see what limitations were necessary, as regards size and weight of the aeroplane itself. The plant was tested by Mr. Groves and myself, and perhaps the results might be of interest. The

Thus it can be seen the power was ample to fly anything I was likely to build. I consider a machine weighing anything between four and six pounds to be quite large enough to experiment with, to say nothing of the inconvenience of transport about London with a larger machine.

Now for the actual building of the machine. The first thing was to make scale drawings. This was essential as it was most necessary to get a proper arrangement of the plant. The position of the c.g. was calculated in order to get an idea of where the tanks were to be placed, and to have a sufficient depth of fuselage at this point to allow clearance between the boiler and the tanks. It might be of interest to note that on verification the c.g. came within $\frac{1}{8}$ in. of the calculated point. Needless to say, the $\frac{1}{8}$ in. was on the right side, i.e., further forward than the calculated position.

Seeing the body was intended to be completely covered in, the drawing out of the machine greatly helped matters as regards the best fitting of the tank openings, in order to have these close at hand for the filling of the tanks.

The drafting completed and approved of, the construction was immediately proceeded with. The wood was ordered from Messrs. Bonns, who also made for me the hemispherical aluminium head, together with the crankshaft extension.

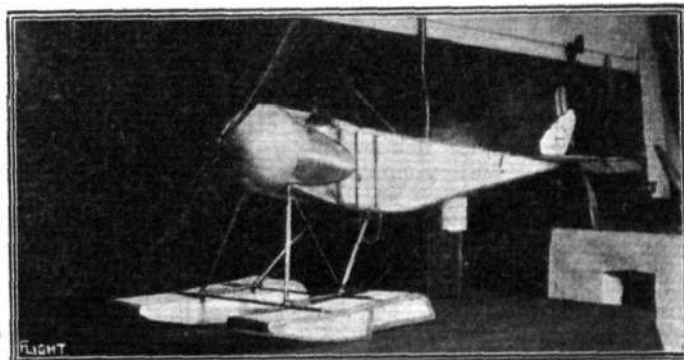


Photo by Mr. Conolly.

Fig. 3.—Mr. Slatter's power-driven model. The front floats, chassis and body.

As can be seen from any of the accompanying photos., the body is rectangular in section, tapering to a vertical knife-edge at the rear and having its greatest depth about 1 ft. from the head to accommodate the pump and tanks.

The actual building of the body does not warrant any special comments. It is built of $\frac{1}{8}$ square birch, and is 4 ft. 6 ins. long.

Using the hemispherical head, it was necessary to employ "formers" to run off the sharp juncture of the head with the flat sides of the body. The one on the underside of the fuselage is left open in order to form an exit for the steam and oil thrown out by the engine. The top former is removable, and forms a means of getting to the engine and needle valve of the lamp. Owing to the "oil slinging" propensities of the engine, I have made a separate compartment for the engine, completely lined with aluminium, to prevent the rejected oil finding its way to the water and benzoline tanks. This was necessary as I didn't want the trouble of dismantling the pump in order to clear the water ways after every run.

Photo. No. 1 shows the engine-room. The only other point of interest in the body is the employment of two steel struts placed in the body to take the wing compression. However, these struts are utilised to not only carry the boiler but also the pump bracket. I recollect at the time I was extremely pleased with this pump bracket. It was my first brazing job, and although it resulted in me singeing my eyelashes and leaving me with a headache that lasted all that week-end, I was as happy as a sandboy when I had finished it. For a satisfactory ending of my first brazing job I have undoubtedly to thank Mr. Groves, who was kind enough to give me personal instruction, but if I thought I was going to have a few more jobs that required brazing I should certainly invest in a pair of bellows. The chassis is made of bamboo of a fairly large section and braced with 22 and 24 gauge steel wire. The ends of the wire are fastened to strainers of the nut and bolt variety, which greatly facilitates the truing up of the chassis. The general outline can be noted on any of the photos.

The bracing up of the body itself was at first a source of trouble. External brackets on the fuselage longerons could not be used as, as has been already stated, the fuselage was intended to be covered in, and in order to preserve an unbroken surface, the bracing anchorages were to be on the inside of the longerons. Until I got the hang of the thing I found it pretty difficult to make a good job of the bracing. The increased size of the wire made it more difficult to handle, and its love of breaking off sharp at the bends did not facilitate matters.

The cabane is made of $\frac{1}{2}$ in. steel tubing, and was pretty straightforward, although the brazing of the legs at the various angles occasioned a bit more trouble. A metal shield was placed under the boiler in order to catch any drippings of methylated spirits and to prevent the flame from blowing down on to the tanks. It so happened that this shield was rather short, and I have something more to say as to the results accruing therefrom later on. An aluminium covering was also placed over the boiler. This extended from end to end, completely hiding the boiler. For appearance sake it was A1, but owing to difficulties in getting the lamp to burn this was modified later, as can be seen in Fig. 1.

The final covering of silk was not a difficult matter. This was doped with four coats of Cellon, and gives the machine a good finish.

The fuselage, now completely finished, including the internal fitting of the controls, it was now time to see how the plant took to its new home and surroundings. Having filled the tanks and fitted a new propeller, we proceeded to start up. Pouring on and igniting the charge of methylated spirits one mistake was immediately apparent, the full significance of which I was to learn a few minutes later. The methylated spirits just poured on, of course, burns straight up, and the resulting flame is quite unrestricted. Until the vaporising coils are hot the benzoline is not turned on, and there is no forced draught to cause the flame to leave by the chute; it simply flared up, struck the top aluminium covering, and was deflected down the two sides, with the subsequent toasting of the fuselage longerons and struts. Unhappily I was unable to detect the smell of this burning, as the atmosphere of the workshop was permeated by the benzoline vapour. Any way the plant started up all right, greatly to my relief, the action of the crankshaft extension being watched with something approaching awe, but our fears proved groundless, and to all intents and purposes the plant was shifting round the 21 in. propeller as easily as the old 19 in., so there couldn't have been much wrong with the extension!

After the plant had been running some little time I noticed the silk burning, at which I immediately shut off the lamp and extinguished the conflagration. The final extent of this "accident" forms the subject of photo. No. 2. The exact cause of the trouble was soon apparent. It seems that the slip-stream of the propeller had forced the flame of the lamp through two small crevices in the chute, and these playing on the silk and wood soon reduced this portion of the fuselage "to its lowest terms."

Of course this made me feel awfully "sick," and I felt like jumping on the machine, for I had very little time left to put matters right again. I patched up the machine sufficiently to take it to the Welsh Harp by "splicing in" two new lengths in the top longerons and modifying the top boiler shield in order to allow the free passage of the flame to the atmosphere.

As can be seen from the photo, the fuselage needed entirely re-covering, and I can honestly say that this hitch made me work for a

fortnight until after midnight, and very glad I was to see the job finally finished, as were the rest of the household. [Can quite believe this.—V. E. J.]

The running of the plant after the repair resulting in no further conflagrations warranted me getting on with the other parts of the machine.

The tail was made out of bamboo and birch, and is double surfaced. Its shape can be easily seen from any of the accompanying photos. Generally it consists of a hemispherical damping plane fitted with two flaps similar to the modern trend of full-size practice.

The rudder is roughly the shape of an ellipse, and is balanced. The controls of the fin and flaps are identical, and consist of cranked levers actuated by a nut and bolt, and so are capable of extreme adjustment.

(To be continued.)

Errata.

In the September 4th issue, page 927, Mr. "K." Wilson should read Mr. "H." Wilson. Mr. Wilson says: "I have been unable to carry out any further experiments since writing to you last, but I hope to recommence the same very shortly."



KITE AND MODEL AEROPLANE ASSOCIATION.

Official Notices.

British Model Records.

| | | | |
|---|----------|---------------|------------------|
| Singlescrew, hand-launched | Duration | J. E. Louch | 95 secs. |
| Twin screw, do. ... | Distance | K. Lucas | 590 yards. |
| | Duration | G. Hayden | 137 secs. |
| Single screw, rise off ground | Distance | W. E. Evans | 290 yards. |
| | Duration | J. E. Louch | 68 secs. |
| Twin screw, do. ... | Distance | L. H. Slatter | 365 yards. |
| | Duration | J. E. Louch | 2 mins. 49 secs. |
| Single-tractor screw, hand-launched ... | Distance | C. C. Dutton | 266 yards. |
| | Duration | J. E. Louch | 91 secs. |
| Do., off-ground ... | Distance | C. C. Dutton | 190 yards. |
| | Duration | J. E. Louch | 94 secs. |
| Single screw hydro., off-water ... | Duration | L. H. Slatter | 35 secs. |
| Single-tractor, do., do. ... | Duration | C. C. Dutton | 29 secs. |
| Twin screw, do., do. ... | Duration | S. C. Hersom | 65 secs. |
| Engine driven off grass ... | Duration | D. Stanger | 51 secs. |

Farrow Shield.—The result of the semi-final round is as follows:—"Aero Models Association," grand total, 569 secs.; "Paddington Aero Club," 560 secs. As several members of the Croydon and District Aero Club have been called to the front, they were unable to send a team to compete against Leytonstone Aero Club, who therefore meet Aero Models Association on Wimbledon Common on October 3rd for the final.

K. and M.A. Association Cup.—This competition was held at Leytonstone on the 12th inst., and owing to adverse weather the results were very poor. H. Bedford won the first prize with 356 marks, and will therefore hold the Cup for one year. Second prize is awarded to J. E. Louch. The remainder of the competitors did not qualify.

Notice.—All competitions and trials after Sept. 19th will be postponed owing to the war, with the exception of the Laboratory Competition, the date of which will be published shortly in FLIGHT. All communications regarding models should in future be sent to

46, Temple Sheen Road, East Sheen, S.W.

H. A. LYCHE.

AFFILIATED MODEL CLUBS DIARY.

Club reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).
SEPT. 19TH, competition for Farrow Shield models postponed from last week. Prizes: 3s., pair of carved propellers, and 1s.

UNAFFILIATED CLUBS.

Liverpool Aero Research Club (62, CEDAR GROVE, LIVERPOOL).
SEPT. 19TH, Breckside Park, 4 p.m., h.l. duration competition. Sept. 22nd, general meeting, Cedar Grove, at 8 p.m.

S. Eastern Model Ae.C. (154, PECKHAM RYE, S.E.).

USUAL flying meetings this week-end. Entry forms for the "South Eastern Trophy" competition for single propeller r.o.g. models (to be flown at the end of this month) can be obtained from the hon. sec.

FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C.

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